

A Stereo-Atlas of Ostracod Shells

edited by R. H. Bate, J. W. Neale, David J. Siveter and
P. C. Sylvester-Bradley

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Contributions illustrated by scanning electron micrographs of Ostracoda in stereo-pairs are invited. Full instructions may be obtained on request from any one of the Editors or Editorial Board. Format should follow the style set by the majority of papers in this issue. Descriptive matter apart from illustrations should be cut to a minimum; preferably each plate should be accompanied by one page of text only. Blanks to aid in mounting figures for plates may be obtained from the Editors.

Acknowledgements

This Volume of the *Stereo-Atlas* has been aided by generous financial support from Robertson Research International Ltd. and from the Shell International Petroleum Co. Ltd.

Stereo-viewing for users of the Atlas

In order to obtain maximum information and benefit from the use of the *Stereo-Atlas* it is essential that the user view the micrographs stereoscopically. Small pocket-sized stereo-viewers are most suitable for this purpose. Two suppliers are:

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ON *GLYPTOCY THERE POLITA* BATE

by Carol Mayes
(British Museum [Natural History], London)

Glyptocythere polita Bate, 1965

1965 *Glyptocythere polita* sp. nov. R. H. Bate, *Bull. Br. Mus. nat. Hist. (Geol.)* **11** (3), 107, pl. 5, figs. 8–11, pl. 6, figs. 1–9.

Holotype: Brit. Mus. (Nat. Hist.) **IO 1724**, ♀ carapace.

Type locality: Bed 7, *Glyptocythere polita* Zone, Grey Limestone Series, Bajocian; Hundale Point, Cloughton, Yorkshire, England. Grid Ref.: TA 024949.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. **IO 1724** (♀ car.: Pl. 3, 74, fig. 2), **IO 1726** (♂ car.: Pl. 3, 74, fig. 3; Pl. 3, 76, figs. 2, 4), **IO 1727** (♂ car.: Pl. 3, 76, fig. 6), **IO 1736** (♀ car.: Pl. 3, 74, fig. 1; Pl. 3, 76, fig. 5), **IO 1743** (♀ car.: Pl. 3, 76, fig. 1), **OS 6853** (juv. car.: Pl. 3, 76, fig. 3). Nos. **IO 1724**, **IO 1726**, **IO 1727**, **IO 1736**, **OS 6853** are all from the type locality and level. **IO 1743** is from base bed 6, Bajocian, Bloody Beck, Yorkshire, England; Grid Ref.: SE 94559805.

Explanation of Plate 3, 74

Fig. 1, ♀ car., ext. rt. lat. (**IO 1736**, 712 µm long); fig. 2, ♀ car., ext. lt. lat. (holotype, **IO 1724**, 860 µm long); fig. 3, ♂ car., ext. rt. lat. (**IO 1726**, 1050 µm long).

Scale A (200 µm; × 78), fig. 1; scale B (250 µm; × 67), fig. 2; scale C (250 µm; × 61), fig. 3.

Diagnosis: Large species of genus *Glyptocythere* with subquadrate to subtriangular carapace. Shell surface usually smooth with shallow median sulcus marking the position of adductor muscles (occasional wrinkles in dorsomedian area). Ventrolateral margin projects downward, sometimes forming a thin keel, particularly in the female dimorph. Prominently displayed normal pore canals.

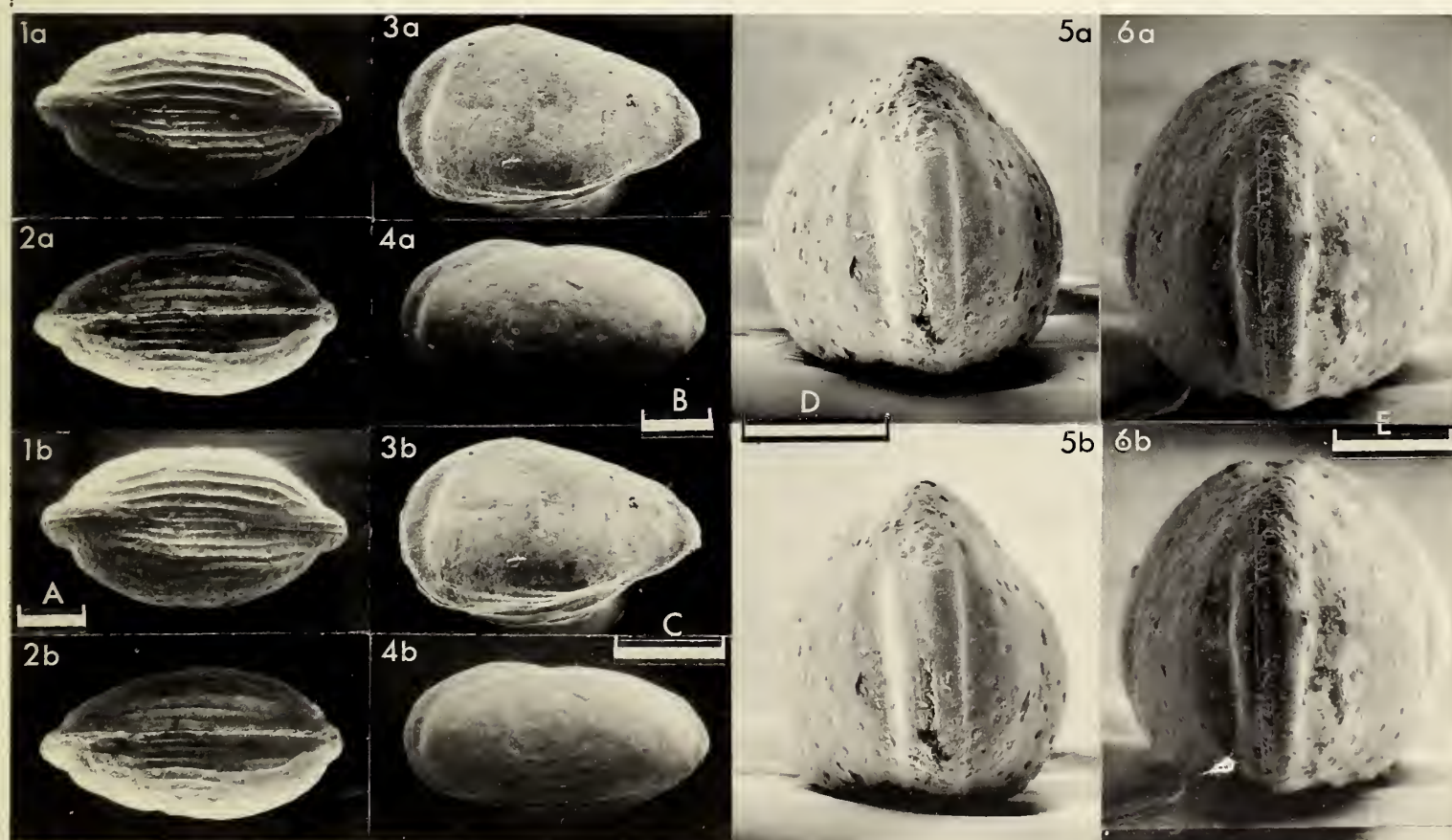
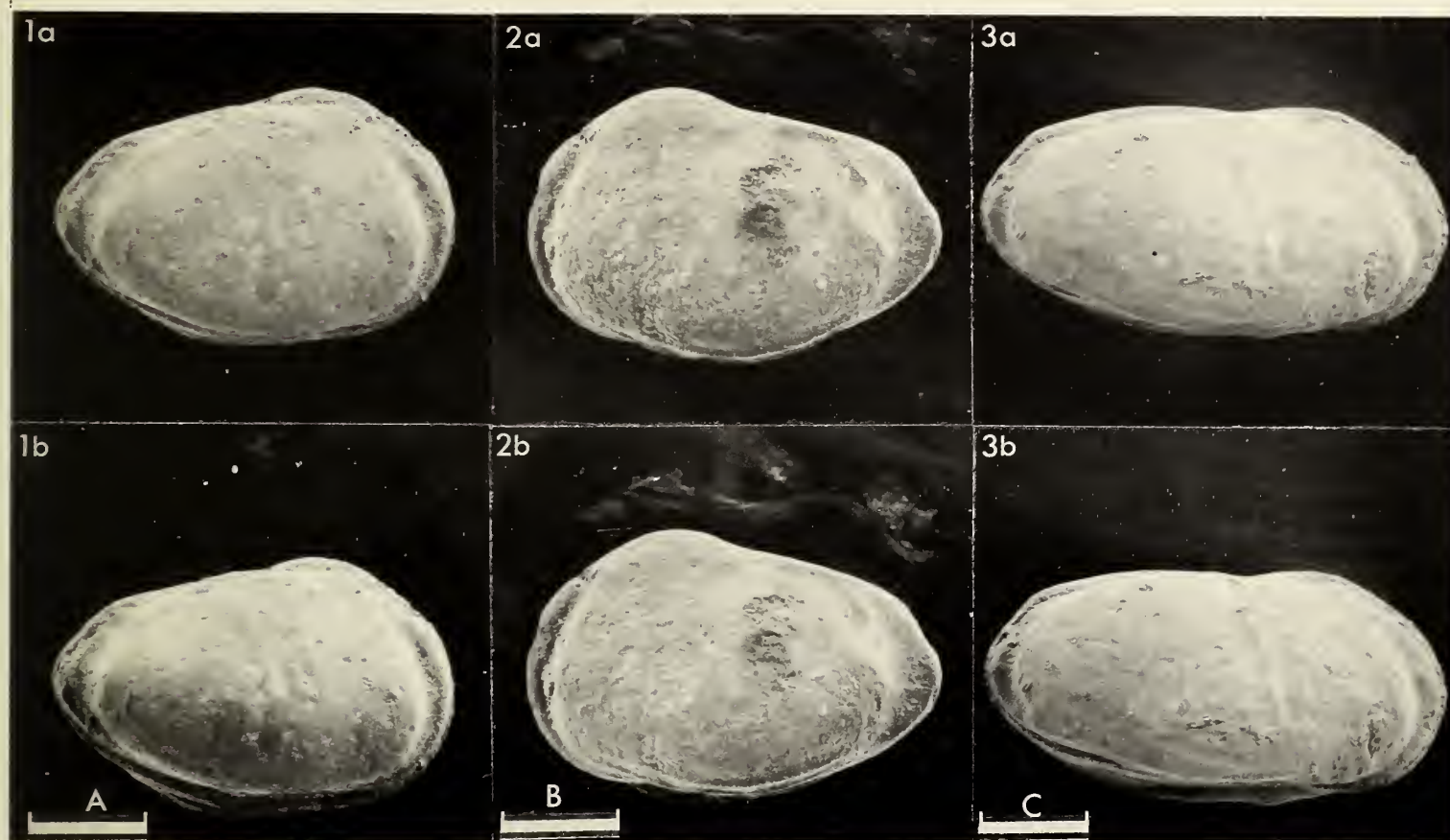
Remarks: The low keel as seen in the holotype (Pl. 3, 74, fig. 2) is not always developed in the female and is very rare in the male. The juvenile hinge is anti-merodont.

Distribution: A marine species. Found in the Bajocian, *G. polita* Zone in the lower part of the Grey Limestone Series of Hundale Point (beds 5–9, 11, 12); Ravenscar (beds 3–9); Bloody Beck (beds 2–6), Yorkshire, England (Bate, op. cit.).

Explanation of Plate 3, 76

Fig. 1, ♀ car., ext. vent. (**IO 1743**, 925 µm long); fig. 2, ♂ car., ext. vent. (**IO 1726**, 1050 µm long); fig. 3, juv. car., ext. lt. lat. (**OS 6853**, 655 µm long); fig. 4, ♂ car., ext. lt. lat. (**IO 1726**, 1050 µm long); fig. 5, ♀ car., ext. ant. (**IO 1736**, 712 µm long); fig. 6, ♂ car., ext. ant. (**IO 1727**, 1125 µm long).

Scale A (200 µm; × 45), fig. 1; scale B (250 µm; × 40), figs. 2, 4; scale C (200 µm; × 74), fig. 3; scale D (200 µm; × 98), fig. 5; scale E (200 µm; × 80), fig. 6.



ON *GLYPTOCY THERE COSTATA* BATE

by Carol Mayes
(British Museum [Natural History], London)

Glyptocythere costata Bate, 1965

1965 *Glyptocythere costata* sp. nov. R. H. Bate, *Bull. Br. Mus. nat. Hist. (Geol.)* **11** (3), 106, pl. 5, figs. 1–7.

Holotype: Brit. Mus. (Nat. Hist.) **IO 1775**, ♀ carapace.

Type locality: Base of bed 10, top of *Glyptocythere polita* Zone, Grey Limestone Series, Bajocian; Ravenscar, Yorkshire, England. Grid Ref.: NZ 988012.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. **IO 1775** (♀ car.: Pl. 3, 78, figs. 1, 2), **IO 1777** (♀ car.: Pl. 3, 80, figs. 4, 5), **OS 6854** (♂ car.: Pl. 3, 80, fig. 3), **OS 6855** (juv. car.: Pl. 3, 80, figs. 1, 2), **OS 6856** (♂ car.: Pl. 3, 78, fig. 3; Pl. 3, 80, fig. 6). All specimens are from the type locality and level.

Explanation of Plate 3, 78

Fig. 1, ♀ car., ext. lt. lat. (holotype, **IO 1775**, 646 µm long); fig. 2, ♀ car., ext. rt. lat. (holotype, **IO 1775**); fig. 3, ♂ car., ext. lt. lat. (**OS 6856**, 731 µm long).

Scale A (200 µm; × 88), figs. 1, 2; scale B (200 µm; × 89), fig. 3.

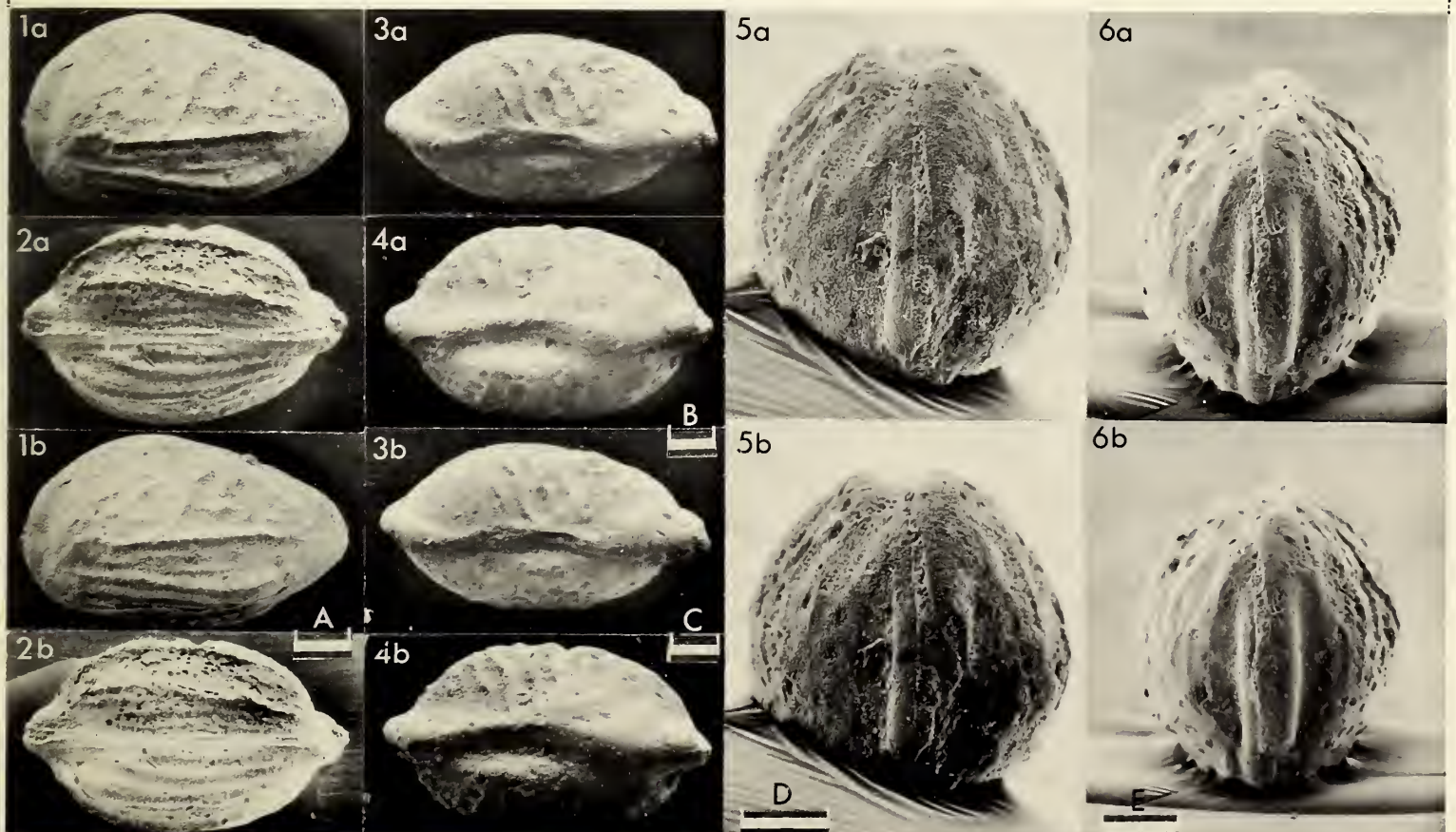
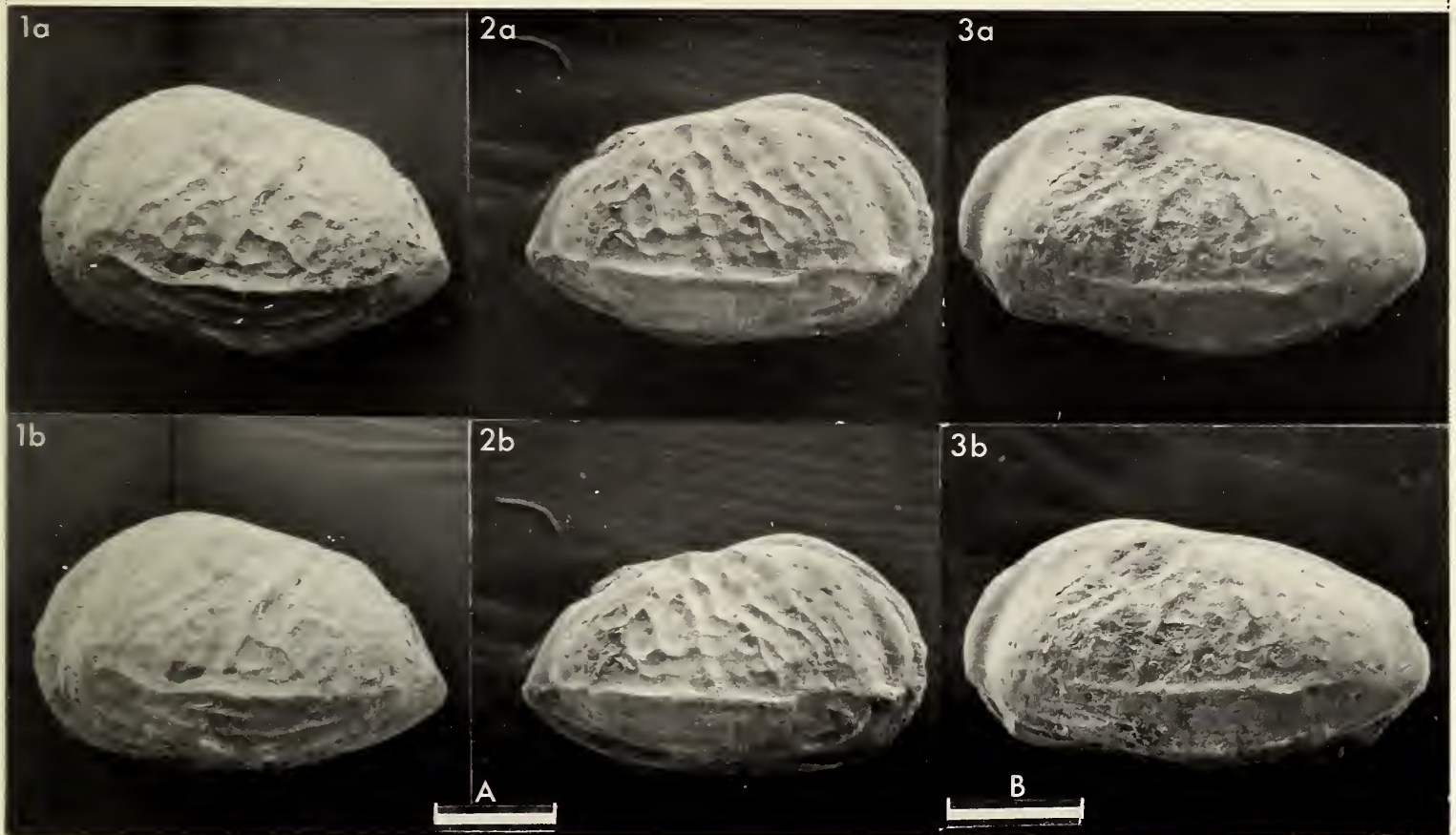
Diagnosis: Species of *Glyptocythere* with subquadrate, posteriorly tapered carapace. Shell surface ornamented medially by irregular, branching, transverse ridges, that diverge from the dorsal margin and by two main parallel longitudinal ridges.

Remarks: The lowermost of the longitudinal ventrolateral ridges sometimes forms a prominent keel. The minor ventrolateral and ventral ridges occasionally bifurcate. Dorsal margin of left valve concave, that of right valve strongly convex.

Distribution: A marine species so far found only in the Bajocian, Grey Limestone Series, of Hundale Point (bed 5); Ravenscar (beds 8, 10, 12), Yorkshire, England (Bate, op. cit.).

Explanation of Plate 3, 80

Fig. 1, juv. car., ext. lt. lat. (**OS 6855**, 578 µm long); fig. 2, juv. car., ext. vent. (**OS 6855**); fig. 3, ♂ car., ext. dors. (**OS 6854**, 680 µm long); fig. 4, ♀ car., ext. dors. (**IO 1777**, 612 µm long); fig. 5, ♀ car., ext. ant. (**IO 1777**); fig. 6, ♂ car., ext. ant. (**OS 6856**, 731 µm long). Scale A (100 µm; × 79), figs. 1, 2; scale B (100 µm; × 68), fig. 3; scale C (100 µm; × 74), fig. 4; scale D (100 µm; × 118), fig. 5; scale E (100 µm; × 105), fig. 6.



ON *LOXOCONCHA RHOMBOIDEA* (FISCHER)

by John Athersuch and John E. Whittaker

(University of Leicester, England, and British Museum [Natural History], London, England)

Genus *LOXOCONCHA* Sars, 18661866 *Loxoconcha* G. O. Sars, *Forh. VidenskSelsk. Krist.* 1865, 61.1866 *Loxoleberis* G. O. Sars, *ibid.*, 130 (*lapsus calami*).1866 *Normania* G. S. Brady, *Trans. zool. Soc. Lond.* 5, 382.Type-species (subsequent designation by Brady & Norman, 1889): *Cythere rhomboidea* Fischer, 1855

Diagnosis: Carapace rather inflated in dorsal view, sometimes with lateral protuberances in posterior half. Generally rhomboidal in side view with characteristic compressed posteroventral margin border. Ornament variously developed concentrically arranged pittings. Hinge gongylodont; median element strongly crenulate. Frontal muscle scar C-shaped. The upper of the middle two adductor muscle scars is the largest. Fulcral point small and simple or absent.

Remarks: The majority of species of *Loxoconcha* examined by the present authors closely resemble the type species with respect to shape, ornamentation, muscle scar patterns and hinge. However, *L. rubritincta* Ruggieri possesses a muscle scar pattern and hinge structure intermediate between *Loxoconcha* and *Sigmatocythere* (see *Stereo-Atlas of Ostracod Shells*, 3, 107–116, 1976).

Explanation of Plate 3, 82

Fig. 1, ♀ RV, ext. lat. (neotype, 1975.1238, 671 µm long); fig. 2, ♀ LV, ext. lat. (1975.1239, 659 µm long); fig. 3, juv. -1 RV, ext. lat. (1975.1240, 488 µm long).

Scale A (200 µm; ×98), figs. 1, 2; scale B (200 µm; ×115), fig. 3.

Loxoconcha rhomboidea (Fischer, 1855)1854 *Cythere flavida* O. F. Müller; W. Zenker, *Arch. Naturgesch.* 20, 86, pl. 5, fig. B4, ? figs. B1–3 (*non C. flavida* O. F. Müller, 1785).1855 *Cythere rhomboidea* sp. nov. S. Fischer, *Abh. bayer. Akad. Wiss.* 7, 656.?1865 *Cythere* (*Normania*) *carinata* sp. nov. G. S. Brady, *Ann. Mag. nat. Hist.*, ser. 3, 16, 189, pl. 9, figs. 1–4.1868 *Loxoconcha impressa* (Baird); G. S. Brady, *Trans. Linn. Soc. Lond.* 26, 433, pl. 25, figs. 35–40, pl. 40, fig. 4 (*non Cythere impressa* Baird, 1850).

Neotype: (here designated). Brit. Mus. (Nat. Hist.) no. 1975.1238; ♀ car. (subsequently split into valves) from the A. M. Norman coll.

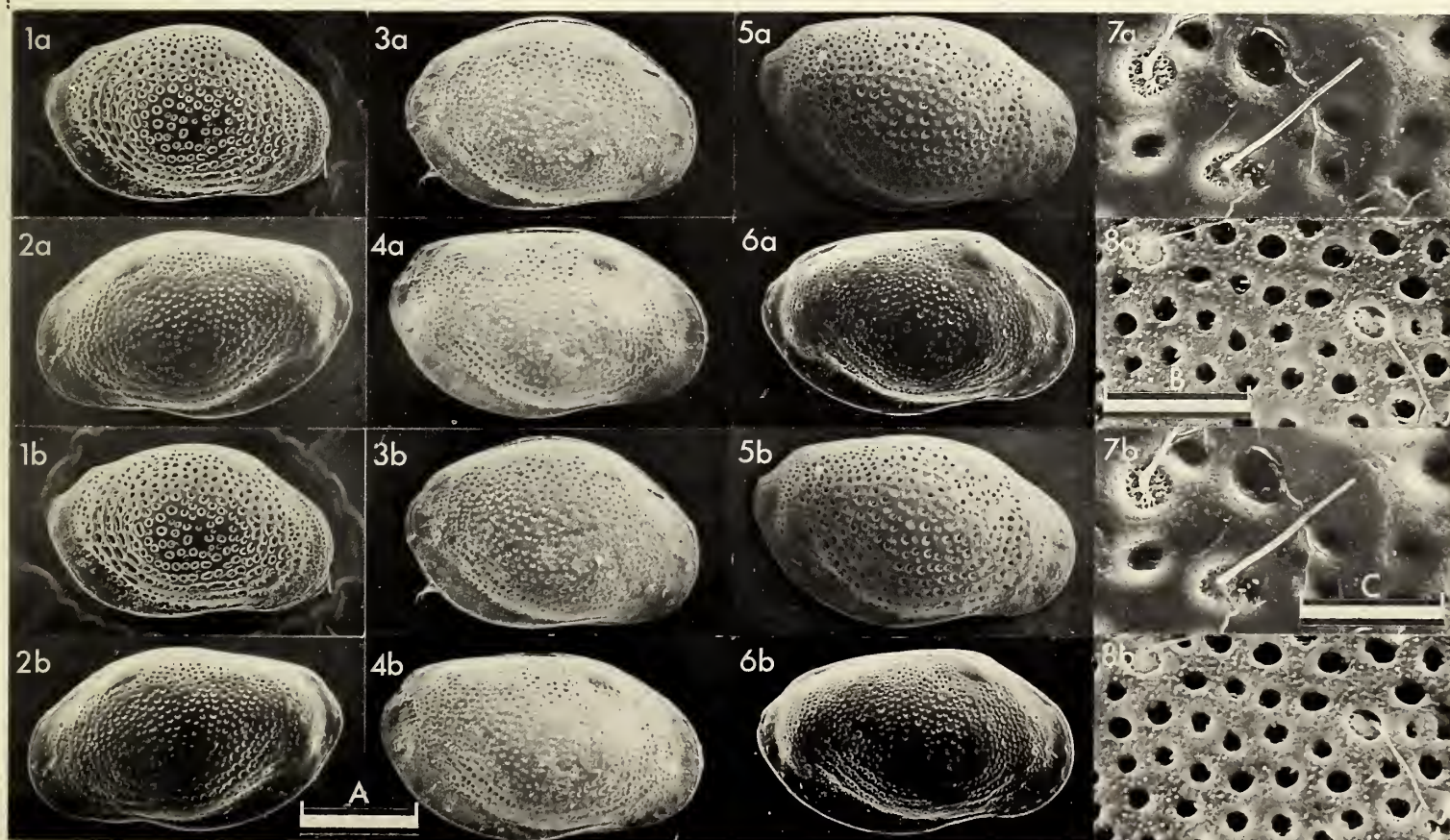
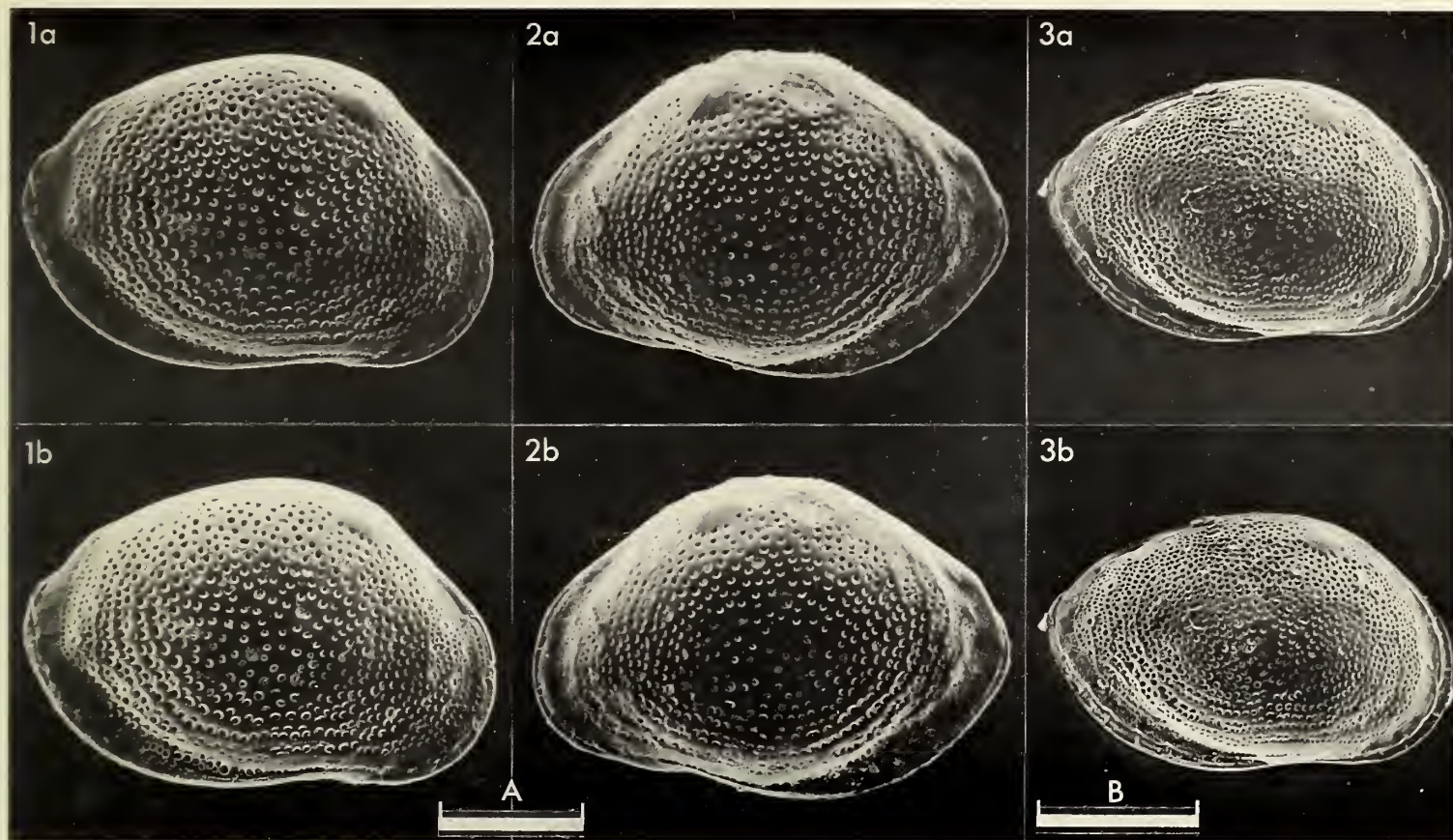
Type locality: Lervig (=Larvik), S Norway, approx. lat. 59°05'N, long. 10°00'E; Recent.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. 1975.1238 Neotype (♀ RV: Pl. 3, 82, fig. 1; Pl. 3, 88, figs. 2, 4), 1975.1239 (♀ LV: Pl. 3, 82, fig. 2), 1975.1240 (juv. -1: Pl. 3, 82, fig. 3; Pl. 3, 84, fig. 8), 1975.1241 (♀ car.: Pl. 3, 84, fig. 1; Pl. 3, 86, fig. 3; Pl. 3, 88, fig. 1), 1975.1242 (♀ car.: Pl. 3, 84, fig. 3), 1975.1243 (♂ car.: Pl. 3, 84, fig. 4), 1975.1244 (♂ RV: Pl. 3, 84, fig. 6), 1975.1245 (♂ LV: Pl. 3, 84, fig. 7), 1975.1246 (♀ RV: Pl. 3, 86, fig. 1; Pl. 3, 88, figs. 3, 5), 1975.1248 (♂ LV & soft parts: Pl. 3, 86, fig. 4), 1975.1247 (♀ RV: Pl. 3, 86, fig. 2), 1976.693 (♂ LV: Pl. 3, 84, fig. 2), 1976.694 (♂ RV: Pl. 3, 84, fig. 5).

1975.1238 and 1975.1245 were taken from a slide in the Norman coll. in the Brit. Mus. (Nat. Hist.) marked 'Larvik'. 1975.1239, 1240, 1246–1248 coll. alive from *Enteromorpha* by J. E. Whittaker during August 1969 from Tidmoor Point, W Fleet, Dorset, England (approx. lat. 50°36'N, long. 2°30'W); salinity 34.4‰, water temp. 19.5°C, pH 8.3, O₂ 123%. 1975.1242 and 1243 coll. alive from *Enteromorpha* by J. E. Whittaker during August 1968 from a rock pool at Osmington Mills, Wey-

Explanation of Plate 3, 84

Fig. 1, ♀ car., ext. rt. lat. (1975.1241, 585 µm long); fig. 2, ♂ LV, ext. lat. (1976.693, 695 µm long); fig. 3, ♀ car., ext. rt. lat. (1975.1242, 615 µm long); fig. 4, ♂ car., ext. rt. lat. (1975.1243, 732 µm long); fig. 5, ♂ RV, ext. lat. (1976.694, 700 µm long); fig. 6, ♂ RV, ext. lat. (1975.1244, 659 µm long); fig. 7, ♂ LV, details of ornament (1975.1245); fig. 8, juv. -1 RV, details of ornament (1975.1240). Scale A (250 µm; ×65), figs. 1–6; scale B (25 µm; ×830), fig. 8; scale C (25 µm; ×790), fig. 7.



Figured specimens: mouth Bay, Dorset, England (approx. lat. 50°38'N, long. 2°23'W); salinity 34.4‰, water temp. 16.1°C, pH 8.0, O₂ 141%. **1975.1241**, from the shoreline of Madeira, was taken from the Brady coll., Brit. Mus. (Nat. Hist.). **1976.693** coll. by Dr E. Robinson from coarse sand at a depth of 10m, 2km off Las Palmas during November 1974. **1975.1244** is from Gullmar Fjord, Sweden (approx. lat. 58°15'N, long. 11°30'E) (O. Elofson coll.), and **1976.694**, containing remnants of soft parts is from St Jean, Monaco (approx. lat. 43°44'N, long. 7°25'E).

Diagnosis: Seen dorsally, widest point of shell in both sexes in middle. In lateral view, dorsal margin of female strongly arched; oral concavity marked in both sexes. Ornament of concentrically arranged fine to medium sized puncta.

Remarks: *C. rhomboidea* was erected by Fischer as a new species for *C. flavida* of Zenker, 1854, non O. F. Müller, 1785, and makes use of Zenker's original description and figures. Zenker's drawing of the carapace (op. cit., pl. 5, fig. B1) is not good and could equally be that of a male *Loxoconcha elliptica* Brady, 1868 (see *StereAtlas of Ostracod Shells* 3, 99–106, 1976), with which *L. rhomboidea* was long confused, but that of the copulatory appendage (fig. B4) is certainly of the present species (cf. our Text-fig. 2e; Pl. 3, 86, fig. 4). As Zenker's material cannot be found (Drs H. Malz and K. Diebel, pers. comm.) it must be presumed lost and we now designate and figure a neotype from the same geographical region.

L. rhomboidea was also for long confused with *Cythere impressa* Baird, 1850, non M'Coy, 1844, but a study of Baird's figures (*Natural History of British Entomostraca*, Ray. Soc., London, 173, pl. 21, fig. 9) shows that that species is more probably a synonym of *Loxoconcha guttata* (Norman,

Explanation of Plate 3, 86

Fig. 1, ♀ RV, dors. (**1975.1246**, 646 µm long); fig. 2, ♀ RV, vent. (**1975.1247**, 645 µm long); fig. 3, ♀ LV, int. lat. (**1975.1241**, 585 µm long); fig. 4, ♂ LV, int. lat. showing soft parts (**1975.1248**, 680 µm long). Scale A (200 µm; × 94), figs. 1, 2; scale B (200 µm; × 104), fig. 3; scale C (200 µm; × 90), fig. 4.

Remarks: 1865). Müller (1894, *Fauna Flora Golf. Neapel*. 21) recorded a species he thought to be conspecific (contd.) with *L. rhomboidea* under the name *L. impressa* from the Bay of Naples, but from his pl. 28, fig. 1 and the description on p. 342, it is clear he was referring, at least in part, to *L. affinis* (Brady, 1868) (see *StereAtlas of Ostracod Shells* 3, 91–98, 1976). For further discussion of the complicated synonymy of *L. rhomboidea* see Sylvester-Bradley, 1946 (*Ann. Mag. nat. Hist.* ser. 11, 13, 195).

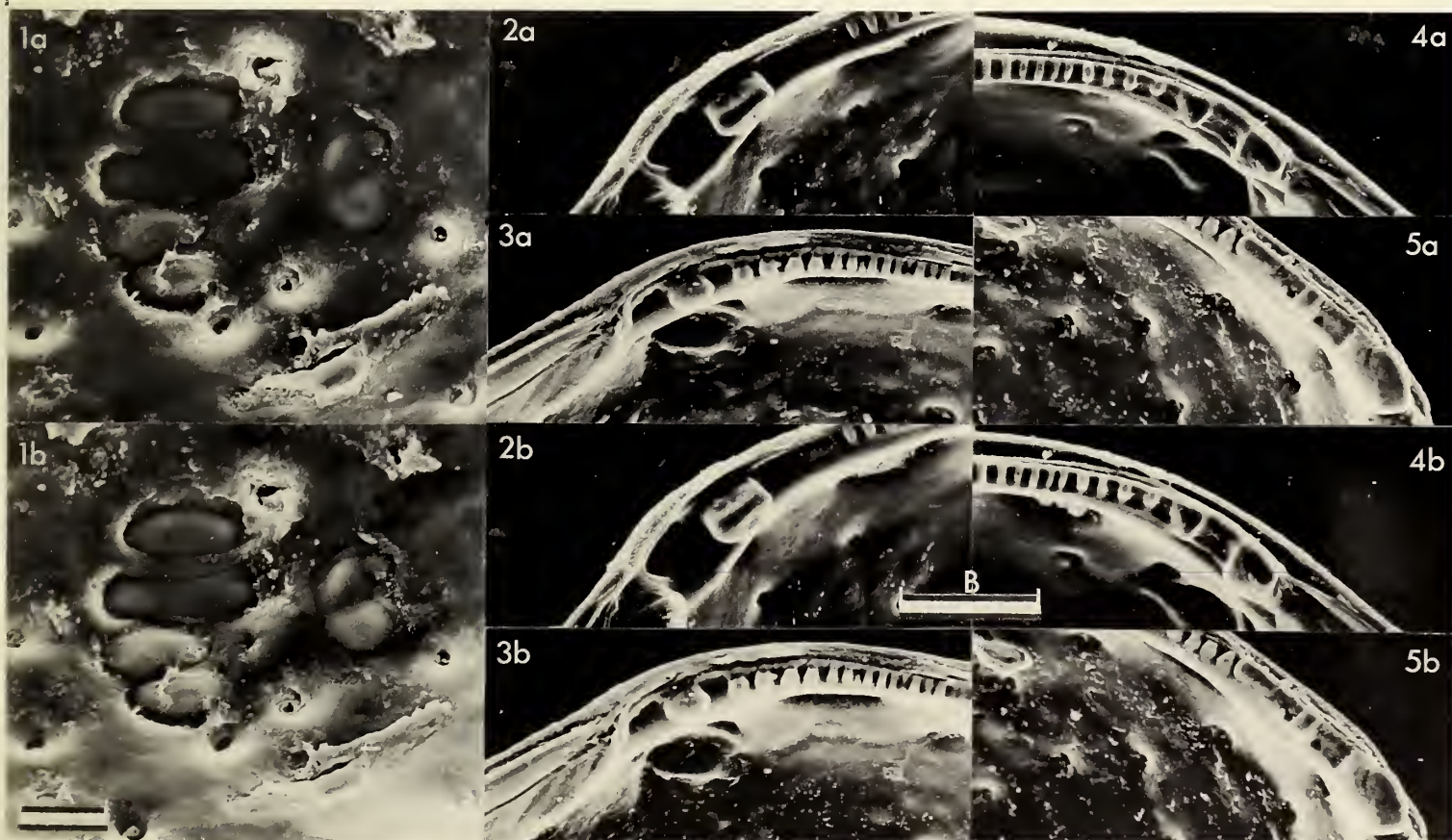
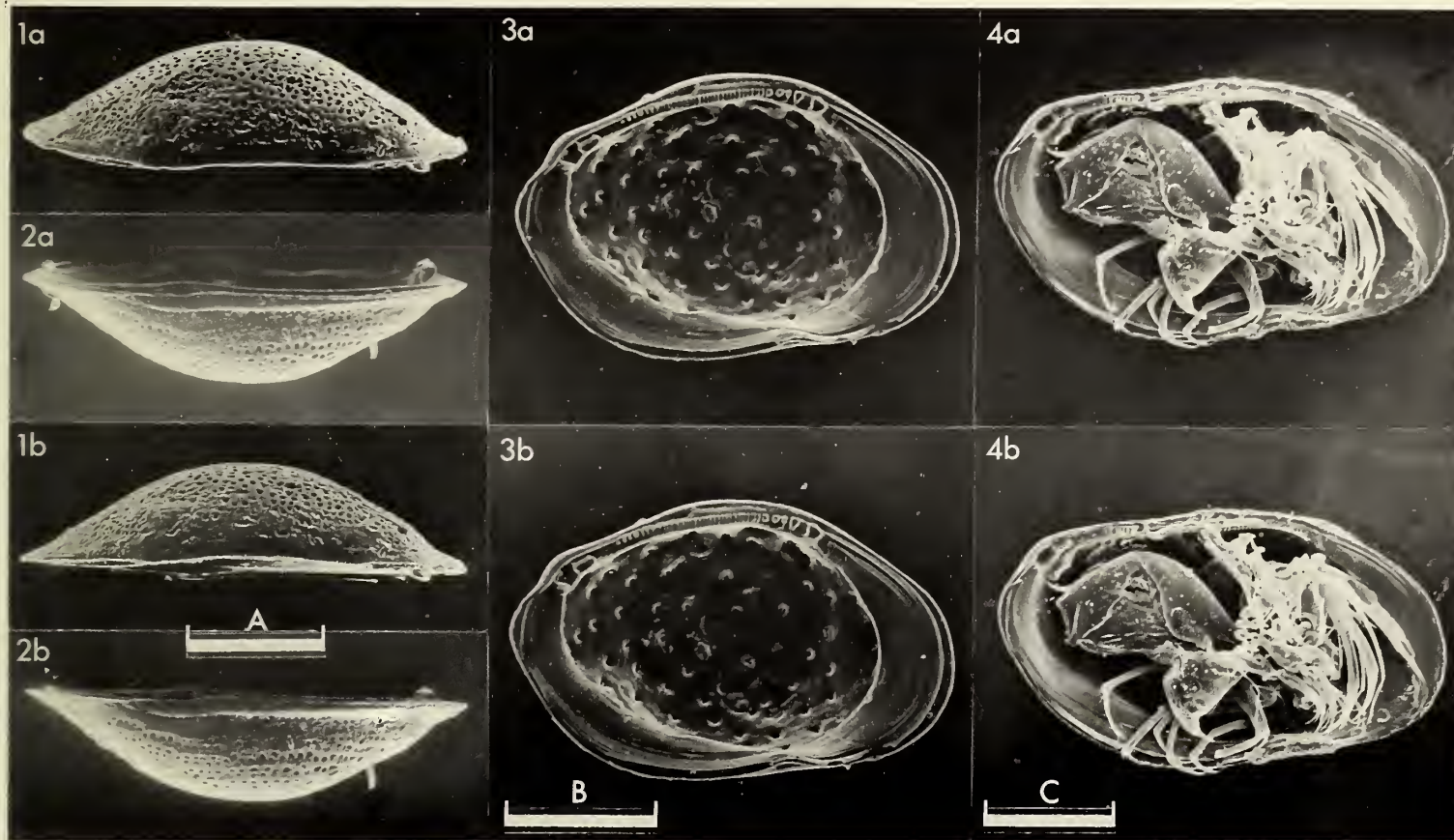
Distribution: A common phytal species in the eulittoral and sublittoral zones of the coasts of Europe from N Norway to Madeira and the Canary Islands, off N Africa. NW European specimens are always finely punctate, those to the S often more coarsely so.

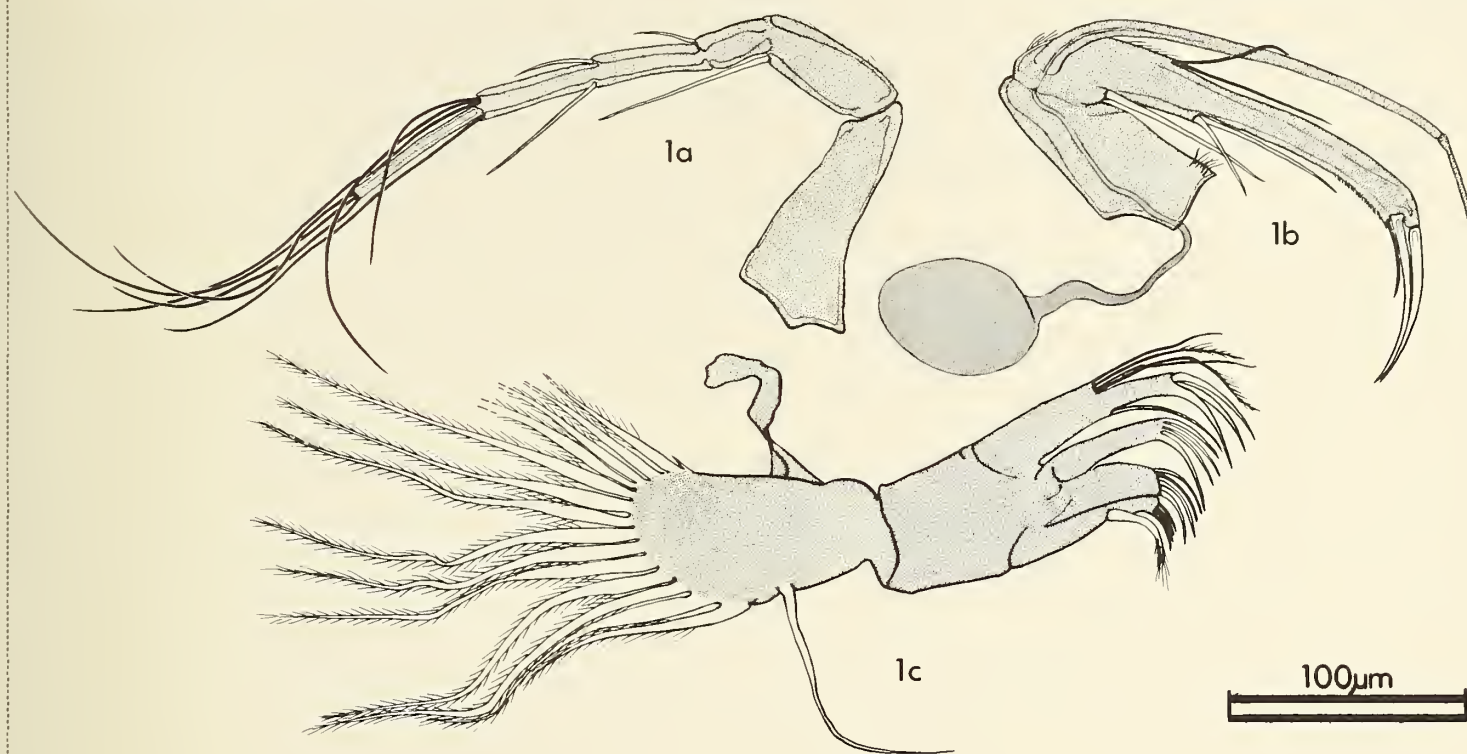
Mediterranean records now need careful revision. Some of the Recent specimens examined, particularly those from the W Mediterranean (e.g. Monaco and Naples, Italy), do appear to be *L. rhomboidea*. Specimens from the eastern part have often proved to be *L. affinis* Brady, although some sub-Recent specimens from Cyprus (J. Athersuch coll.) may be considered as *L. rhomboidea*. Both species occur at Naples, Italy. Records of *L. rhomboidea* from the Black Sea (e.g. Schornikov, 1969, *Definitive Fauna of the Black and Azov Seas* 2, 197, pl. 24, fig. 1) probably do not represent the present species. Specimens from the E coast of N America, attributed to *L. impressa* (Baird) (e.g. Cushman, 1906, *Proc. Boston Soc. nat. Hist.* 32, pt. 10; Tressler & Smith, 1948, *Maryland Chesapeake Biol. Lab. Pub.* 71) are now regarded as distinct species.

Brady recorded *Cythere (Normania) carinata*, of which the type material is presumed lost, from the Pleistocene Brickearths of the River Nar (Brady, 1865); later (Brady, 1868) he considered this species to be conspecific with *L. rhomboidea*, but no specimens attributable to this species have subsequently been found in these deposits (pers. comm. Dr E. Robinson).

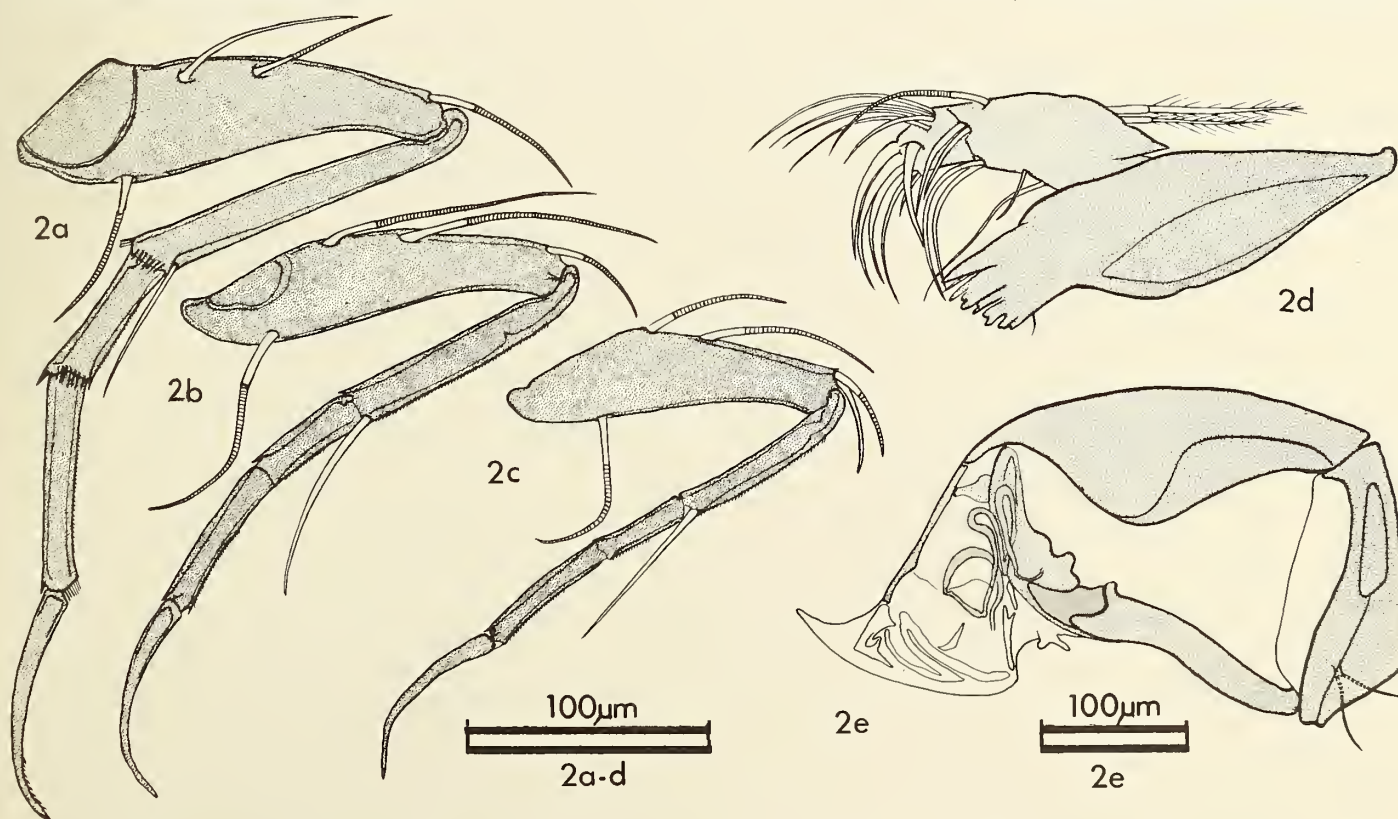
Explanation of Plate 3, 88

Fig. 1, ♀ LV, musc. sc. (**1975.1241**); figs. 2, 4, ♀ LV, terminal hinge elements (neotype, **1975.1238**); figs. 3, 5, ♀ RV, terminal hinge elements (**1975.1246**). Scale A (25 µm; × 495), fig. 1; scale B (50 µm; × 396), figs. 2–5.





Text-fig. 1. Appendages of *Loxoconcha rhomboidea*. 1a, ♂ lt. first antenna; 1b, ♂ rt. second antenna; 1c, ♀ maxilla.



Text-fig. 2. Appendages of *Loxoconcha rhomboidea*. 2a-c, ♂ rt. legs 1-3; 2d, ♂ mandible; 2e, ♂ lt. copulatory appendage.



ON *LOXOCONCHA AFFINIS* (BRADY)by John Athersuch
(University of Leicester, England)*Loxoconcha affinis* (Brady, 1866)1866 *Normania affinis* sp. nov. G. S. Brady, *Trans. zool. Soc. Lond.* 5, 382, pl. 61, figs. 12a–d.1868 *Loxoconcha affinis* (Brady); G. S. Brady, *Ann. Mag. nat. Hist. ser. 4*, 2, 220.1894 *Loxoconcha impressa* (Baird); G. W. Müller, *Fauna Flora Golf. Neapel* 21, pl. 28, fig. 1; ?pl. 27, figs. 16, 20; non pl. 27, fig. 17, pl. 28, fig. 6.1912 *Loxoconcha bairdi* nom. nov. (pro *Cythere impressa* Baird, 1850, non M'Coy, 1844) G. W. Müller, *Tierreich* 31, 306, fig. 85.1942 *Loxoconcha adriatica* sp. nov. W. Klie, *Zool. Anz.* 139, 67, figs. 1–5.1975 *Loxoconcha* aff. *L. rhomboidea* (Fischer); H. Uffenorde, *Göttinger Arb. Geol. Paläont.* no. 13, 85, pl. 9, fig. 5.*Lectotype*: (here designated). Brady coll., Hancock Museum, Newcastle-upon-Tyne; ♀ LV and RV. No catalogue number, but placed in a separate, labelled slide. [Paralectotype: also on separate, labelled slide in Brady coll.].*Type locality*: The Levant; Recent.*Figured specimens*: Hancock Museum specimens: Lectotype (♀ LV: Pl. 3, 92, fig. 2), Paralectotype (♀ RV: Pl. 3, 96, fig. 4). Universität Hamburg Zoologisches Museum no. K30389 (ex-Klie coll. no. 149) (♂ LV: Pl. 3, 94, figs. 2, 4). Brit. Mus. (Nat. Hist.) nos. 1975.1232 (♂ RV: Pl. 3, 94, fig. 1), 1975.1233 (♀ LV: Pl. 3, 96, fig. 1; Pl. 3, 98, figs. 1, 2, 4), 1975.1234 (♀ RV: Pl. 3, 98, figs. 3, 5), 1975.1235 (♀ RV: Pl. 3, 96, fig. 3), 1975.1236 (juv. –1:

Explanation of Plate 3, 92

Fig. 1, ♀ RV, ext. lat. (1976.695, 598 µm long); fig. 2, ♀ LV, ext. lat. (lectotype, 585 µm long); fig. 3, juv. –1 RV, ext. lat. (1975.1236, 476 µm long).

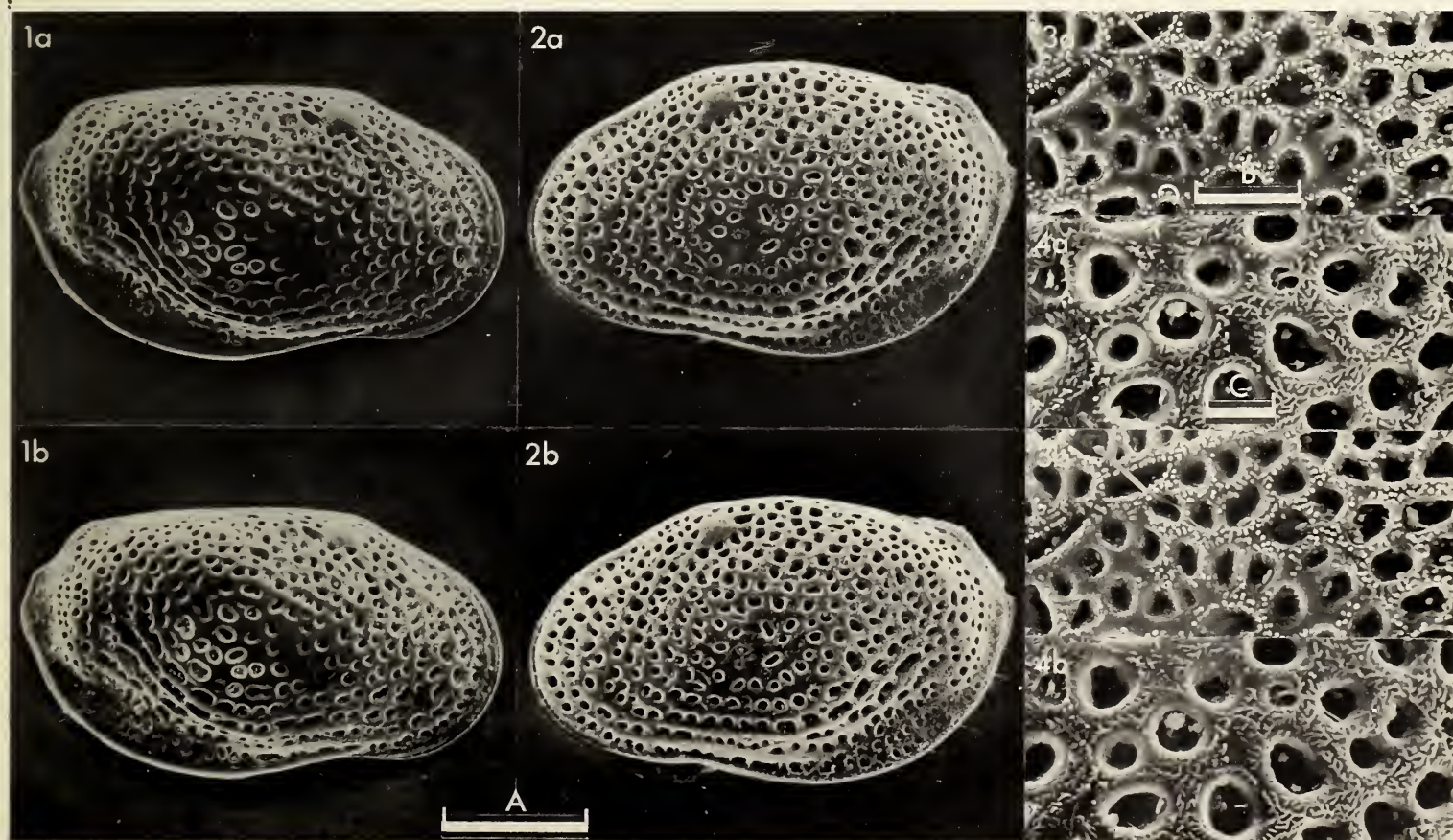
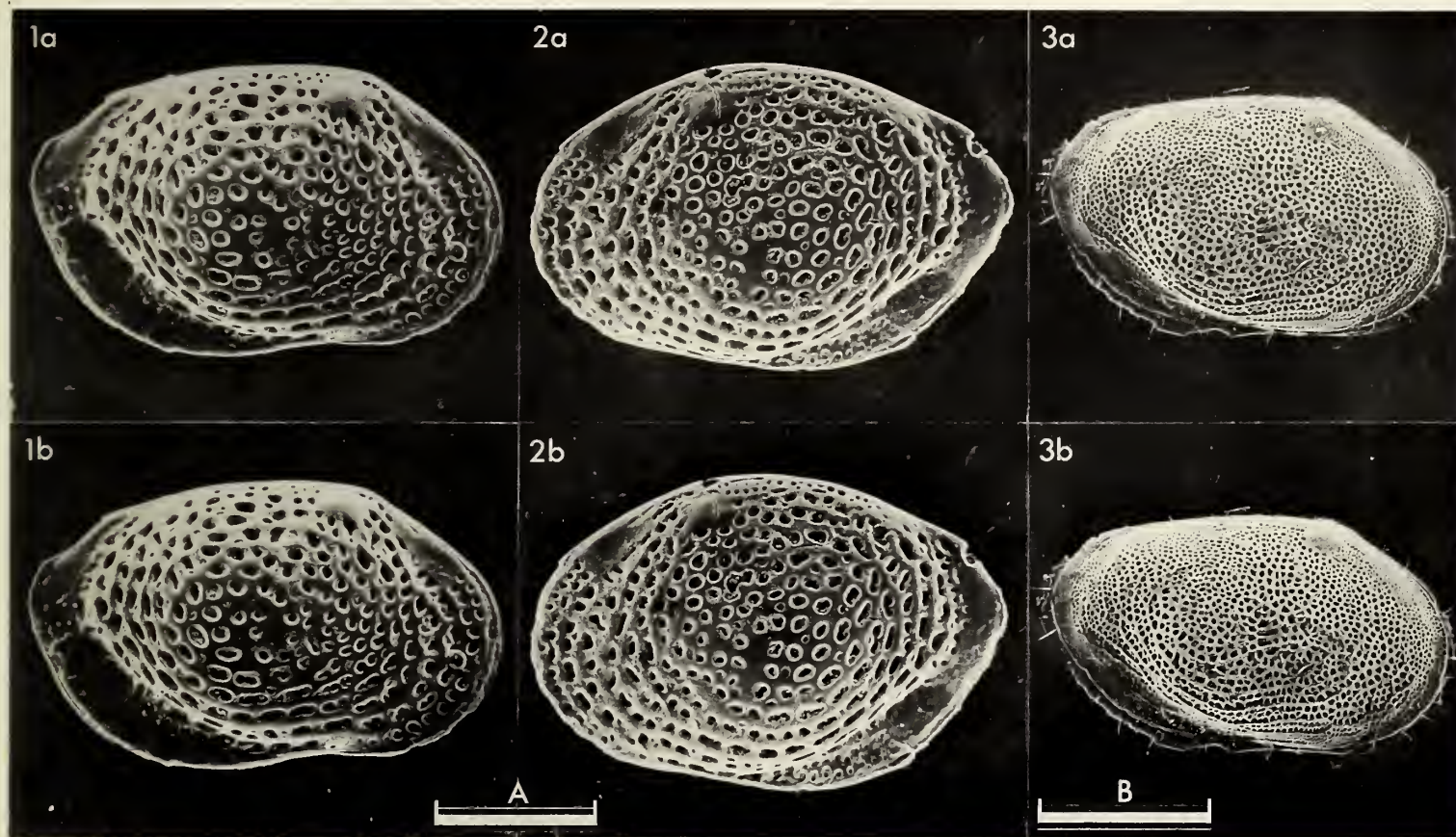
Scale A (200 µm; ×110), figs. 1, 2; scale B (200 µm; ×116), fig. 3.

Figured specimens: Pl. 3, 92, fig. 3; Pl. 3, 94, fig. 3), 1975.1237 (♂ RV & soft parts: Pl. 3, 96, fig. 2), 1976.695 (♀ RV: Pl. 3, 92, fig. 1). Brady specimens are from sponge sand. Klie specimen coll. alive by K. Viets from algae at Spalato, Yugoslavia; approx. lat. 43°30'N, long. 16°30'E, water depth 3–4m. 1975.1232–1237 and 1976.695 coll. alive from Cyprus by J. Athersuch, autumn 1973. 1975.1232, 1976.695 associated with sea-grass *Posidonia* in sand, Pyla; approx. lat. 34°57'N, long. 33°51'E, water temp. 25.5°C, depth 23m, salinity 39‰, O₂ 106%, pH 8.1. 1975.1233–1235 from algae on rocks, Kyrenia; approx. lat. 33°19'N, long. 35°20'E, water temp. 27°C, depth 2–3m, salinity 39‰. 1975.1236, 1237 associated with *Posidonia* in sand, Akrotiri Bay; approx. lat. 34°33'N, long. 33°02'E, water temp. 25°C, depth 20m, salinity 39‰, O₂ 96%.*Diagnosis*: Both sexes have maximum width of carapace behind the mid-point. Dorsal margin of female gently arched. Males more elongate. Fossae subrounded.*Remarks*: *L. affinis* differs from *L. rhomboidea* (Fischer, 1855) (see *Stereo-Atlas of Ostracod Shells* 3, 1976) in details of the male copulatory appendages, in having a less arched female dorsal margin, and a less developed anteroventral oral concavity. *L. affinis* characteristically has coarser ornament, is smaller, and its maximum width is sited further back.G. W. Müller claimed (1894) that large and small forms of *L. impressa* (Baird) occurred in the Bay of Naples, Italy, but considered that these were only local varieties. It seems probable from his description and illustrations that the smaller form was *L. affinis* and that the larger was *L. rhomboidea*. Müller later (1912) suggested *L. bairdi* as a new name for *L. impressa* (Baird) (primary homonym of *C. impressa* M'Coy, 1844). However, his redescription and illustration (1912, 306, fig. 85) are undoubtedly of *L. affinis*.*Distribution*: Many previous Mediterranean records of *L. impressa*, *L. bairdi* and *L. rhomboidea* may in fact refer to *L. affinis*. The following records can be confirmed: Recent from Adriatic (Klie, op. cit.; Uffenorde, op. cit.), Cyprus (herein), Tenedos (=Bozcaada) and Levant (Brady, op. cit.), Bay of Naples, Italy (Müller, 1894), Lago del Fusaro, Naples, Italy (McKenzie, 1963, *Annuar. Ist. Mus. Zool. Univ. Napoli* 15).

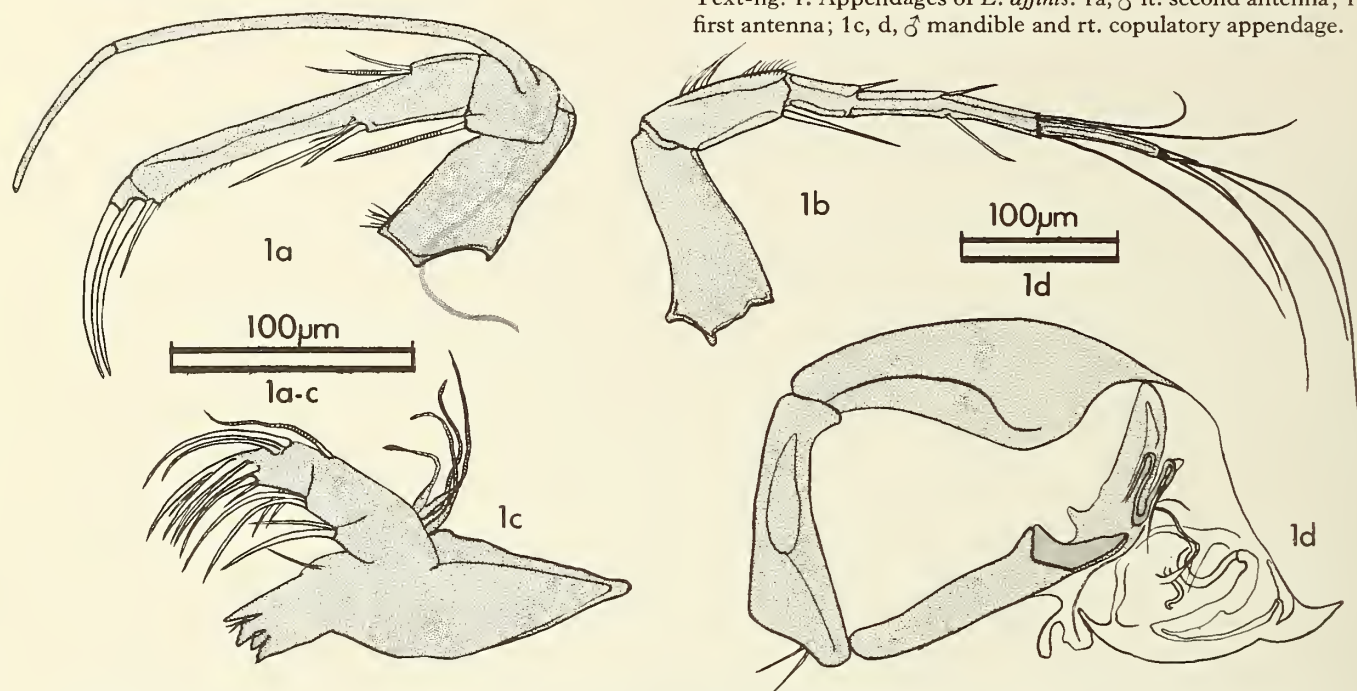
Explanation of Plate 3, 94

Fig. 1, ♂ RV, ext. lat. (1975.1232, 622 µm long); fig. 2, ♂ LV, ext. lat. (K30389, 671 µm long); fig. 3, juv. –1, detail of ornament (1975.1236); fig. 4, ♂ LV, detail of ornament (K30389).

Scale A (200 µm; ×105), figs. 1, 2; scale B (25 µm; ×580), fig. 3; scale C (25 µm; ×400), fig. 4.

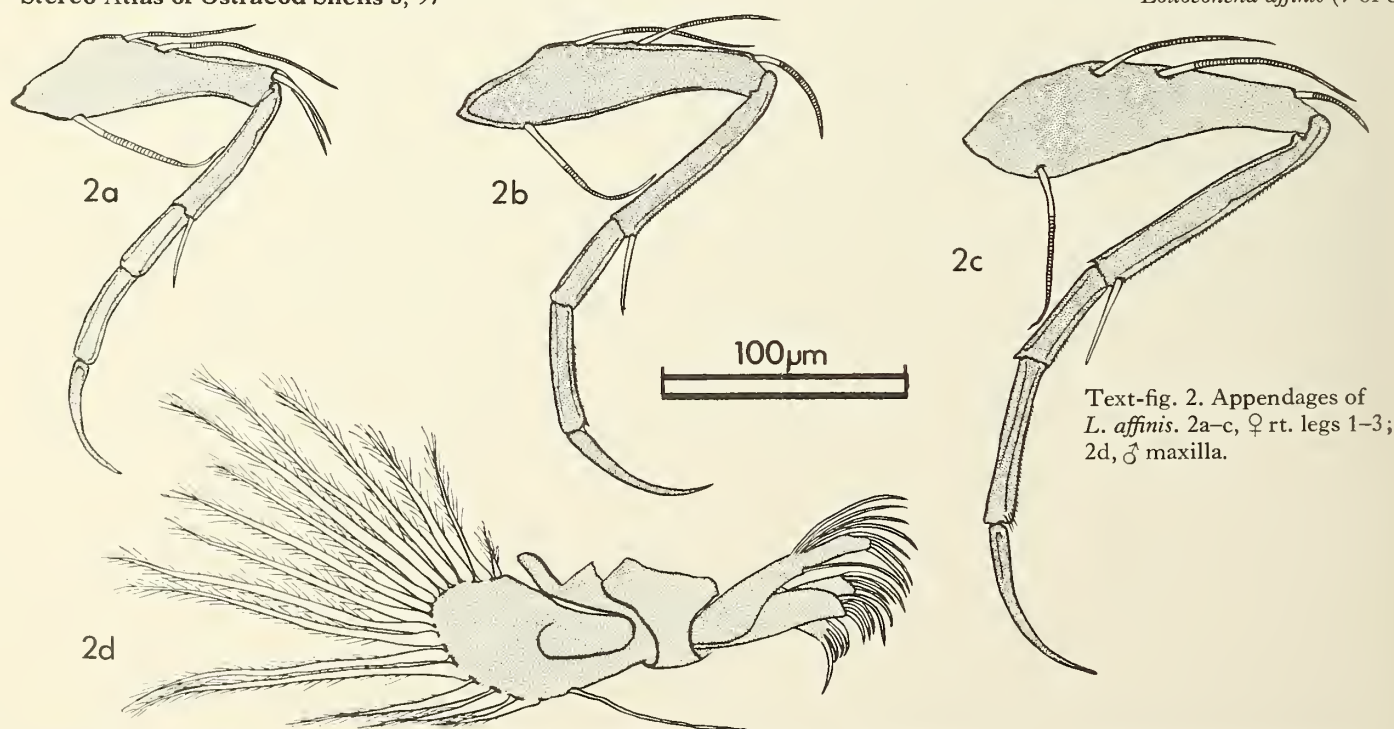


Text-fig. 1. Appendages of *L. affinis*. 1a, ♂ lt. second antenna; 1b, ♀ rt. first antenna; 1c, d, ♂ mandible and rt. copulatory appendage.



Explanation of Plate 3, 96

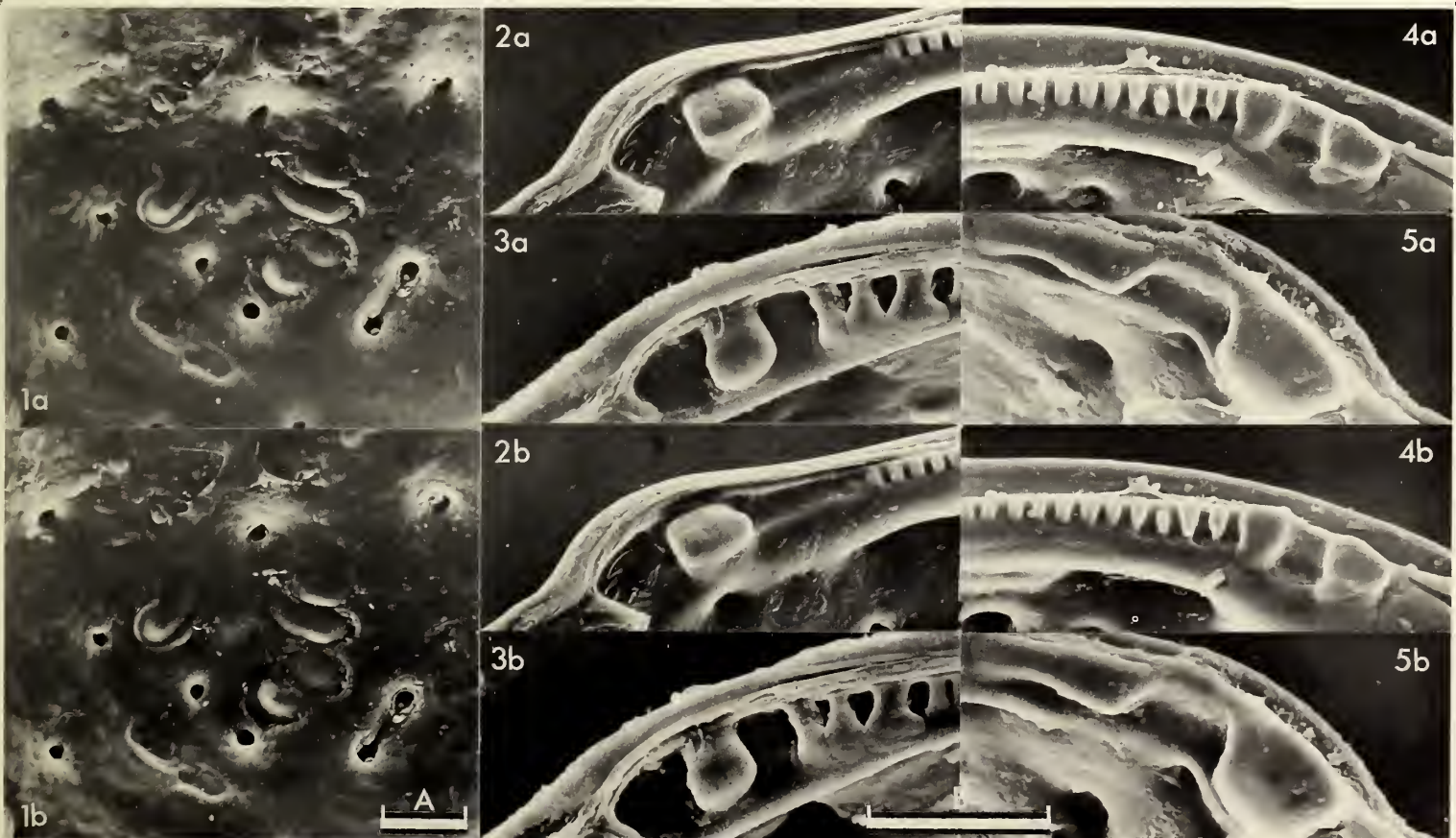
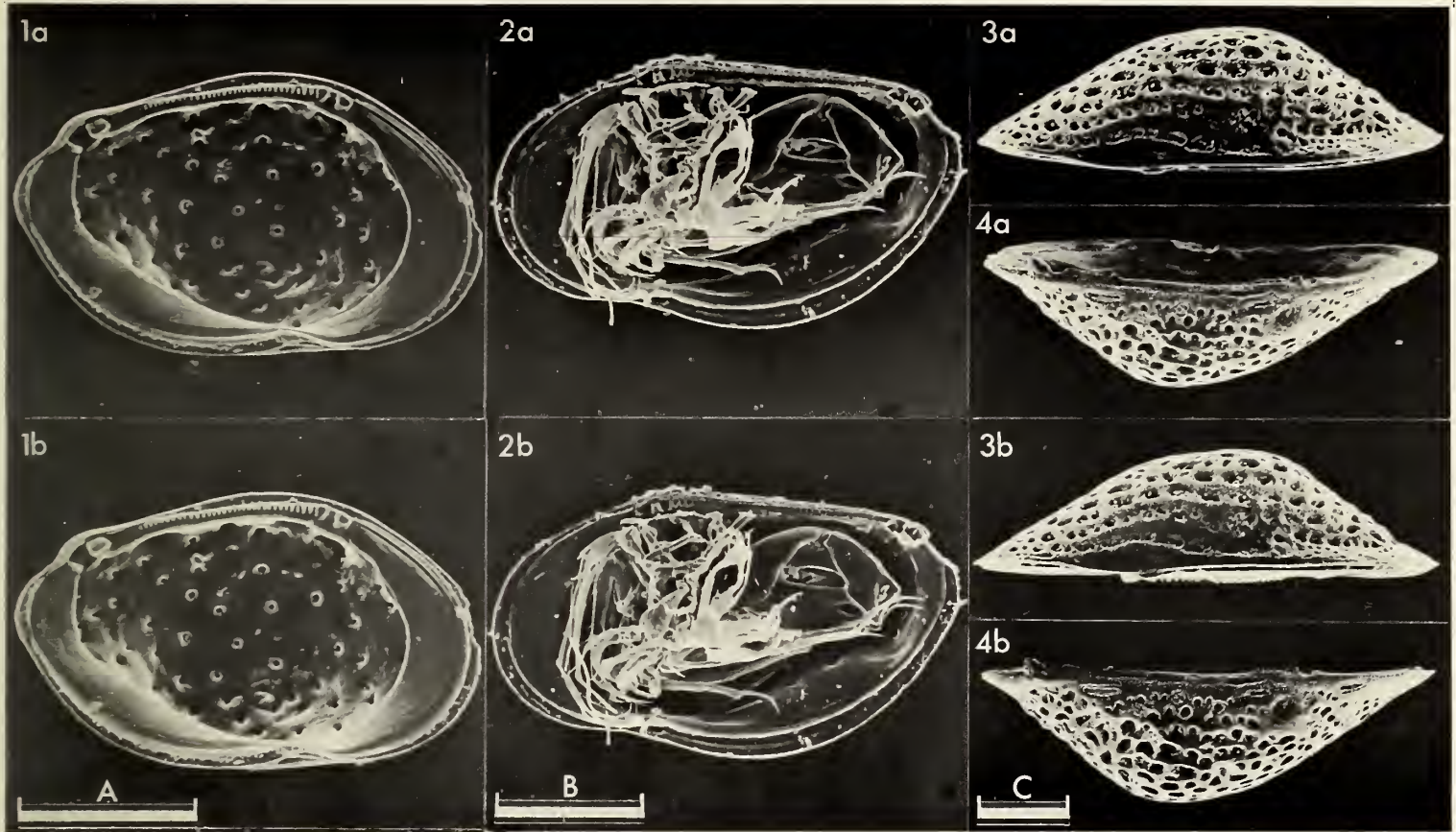
Fig. 1, ♀ LV, int. lat. (1975.1233, 524 µm long); fig. 2, ♂ RV, int. lat. showing soft parts (1975.1237, 610 µm long); fig. 3, ♀ RV, vent. (1975.1235, 537 µm long); fig. 4, ♀ RV, dors. (paralectotype, 537 µm long). Scale A (200 µm; $\times 124$), fig. 1; scale B (200 µm; $\times 105$), fig. 2; scale C (100 µm; $\times 120$), figs. 3, 4.



Text-fig. 2. Appendages of *L. affinis*. 2a-c, ♀ rt. legs 1-3; 2d, ♂ maxilla.

Explanation of Plate 3, 98

Fig. 1, ♀ LV, int. lat. musc. sc. (1975.1233); figs. 2, 4, ♀ LV, terminal elements of hinge (1975.1233); figs. 3, 5, ♀ RV, terminal elements of hinge (1975.1234). Scale A (25 µm; $\times 435$), fig. 1; scale B (50 µm; $\times 496$), figs. 2-5.



ON *LOXOCONCHA ELLIPTICA* BRADY

by John Athersuch and John E. Whittaker
(University of Leicester, England, and British Museum [Nat. Hist.], London, England)

Loxoconcha elliptica Brady, 1868

- 1853 *Cythere viridis* O. F. Müller; W. Liljeborg, *De Crustaceis ex ordinibus tribus: Cladocera, Ostracoda et Copepoda, in Scania occurrentibus*, Lund, 168, pl. 18, figs. 4–6, 8–13, pl. 19, figs. 3–5 (non *C. viridis* O. F. Müller, 1785).
1868 *Loxoconcha elliptica* sp. nov. G. S. Brady, *Trans. Linn. Soc. Lond.* **26**, 435, pl. 27, figs. 38, 39, 45–48, pl. 40, figs. 3a, b.
1928 *Cythere* sp.; H. Gauthier, *Récherches sur la faune des eaux continentales de l'Algérie et de la Tunisie*, Algiers, 385, text-figs. 59A–F, 60A–H.
1929 *Loxoconcha gauthieri* sp. nov. W. Klie, *Z. wiss. Zool.* **134**, 292, text-figs. 23–25.
non 1941 *Loxoconcha elliptica* sp. nov. J. H. Bonnema, *Natuurh. Maandbl.*, Maastricht **30**, 26, pl. 6, figs. 6–11.
non 1972 *Loxoconcha elliptica* Brady; H. Uffenorde, *Göttinger Arb. Geol. Paläont.* **13**, 84, pl. 9, fig. 3.

Lectotype: (here designated). Brady coll., Hancock Museum, Newcastle-upon-Tyne; ♀ carapace. No catalogue number, but placed in a separate, labelled slide. Taken from a slide originally labelled *Normania elliptica* (Brady), subsequently altered to *N. viridis*.

Type locality: Arnold's Pool (=Vale Pond), Guernsey, Channel Islands; approx. lat. 45°30'N, long. 2°37'W. Recent, brackish water.

Figured specimens: Hancock Mus. specimen: Lectotype (♀ car.: Pl. 3, 100, fig. 1). Brit. Mus. (Nat. Hist.) nos. **1975.958** (♂ car.: Pl. 3, 100, fig. 2), **1975.959** (juv. –1 car.: Pl. 3, 100, fig. 3), **1975.960** (♀ car.: Pl. 3, 102, fig. 1),

Explanation of Plate 3, 100

Fig. 1, ♀ car., ext. rt. lat. (lectotype, 590 µm long); fig. 2, ♂ car., ext. rt. lat. (**1975.958**, 650 µm long); fig. 3, juv. –1 car., ext. rt. lat. (**1975.959**, 500 µm long).

Scale A (250 µm; ×100), figs. 1–3.

Figured specimens: **1975.961** (♂ car.: Pl. 3, 102, fig. 2), **1975.962** (♂ LV: Pl. 3, 102, fig. 3), **1975.963** (♀ LV: Pl. 3, 104, (contd.) figs. 1, 3, 5), **1975.964** (♀ RV: Pl. 3, 104, figs. 2, 4), **1975.965** (♂ RV: Pl. 3, 106, fig. 3), **1975.966** (♀ car.: Pl. 3, 106, fig. 1), **1975.967** (♂ LV: Pl. 3, 106, fig. 2). Lectotype coll. alive by A. M. Norman. **1975.958–961, 963, 964, 966**, coll. alive from *Fucus ceranoides* in shallow, brackish water, Mother Siller's Channel, Christchurch Harbour, Hampshire, S England; approx. lat. 50°43'N, long. 1°45'W, water temp. 22°C, salinity 7.4‰. **1975.965, 967** (also living) from *Enteromorpha* at La Teste de Buch, S Arcachon Basin, SW France; approx. lat. 44°39'N, long. 1°09'W. Both localities sampled by J. E. Whittaker, August 1969 and 1970 respectively. **1975.962** (ex-slide no. **1972.3.2.8**) coll. by K. G. McKenzie from Lago del Fusaro, near Naples, W Italy; approx. lat. 41°10'N, long. 14°04'E.

Diagnosis: Ornament of valves subdued. Flattened posteroventral marginal border very narrow for genus. No caudal process. Strongly dimorphic; shape of male carapace and copulatory appendages distinctive.

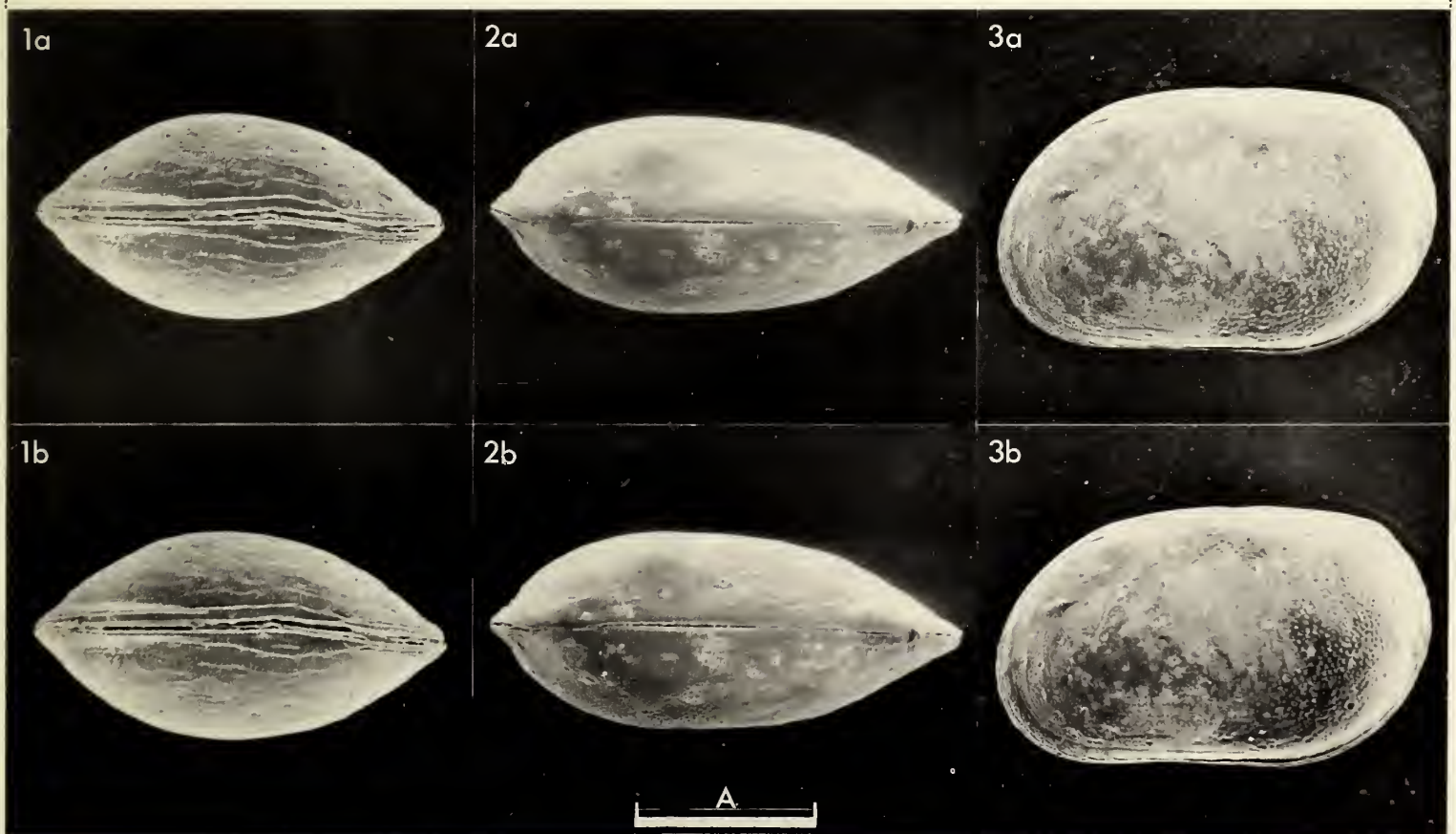
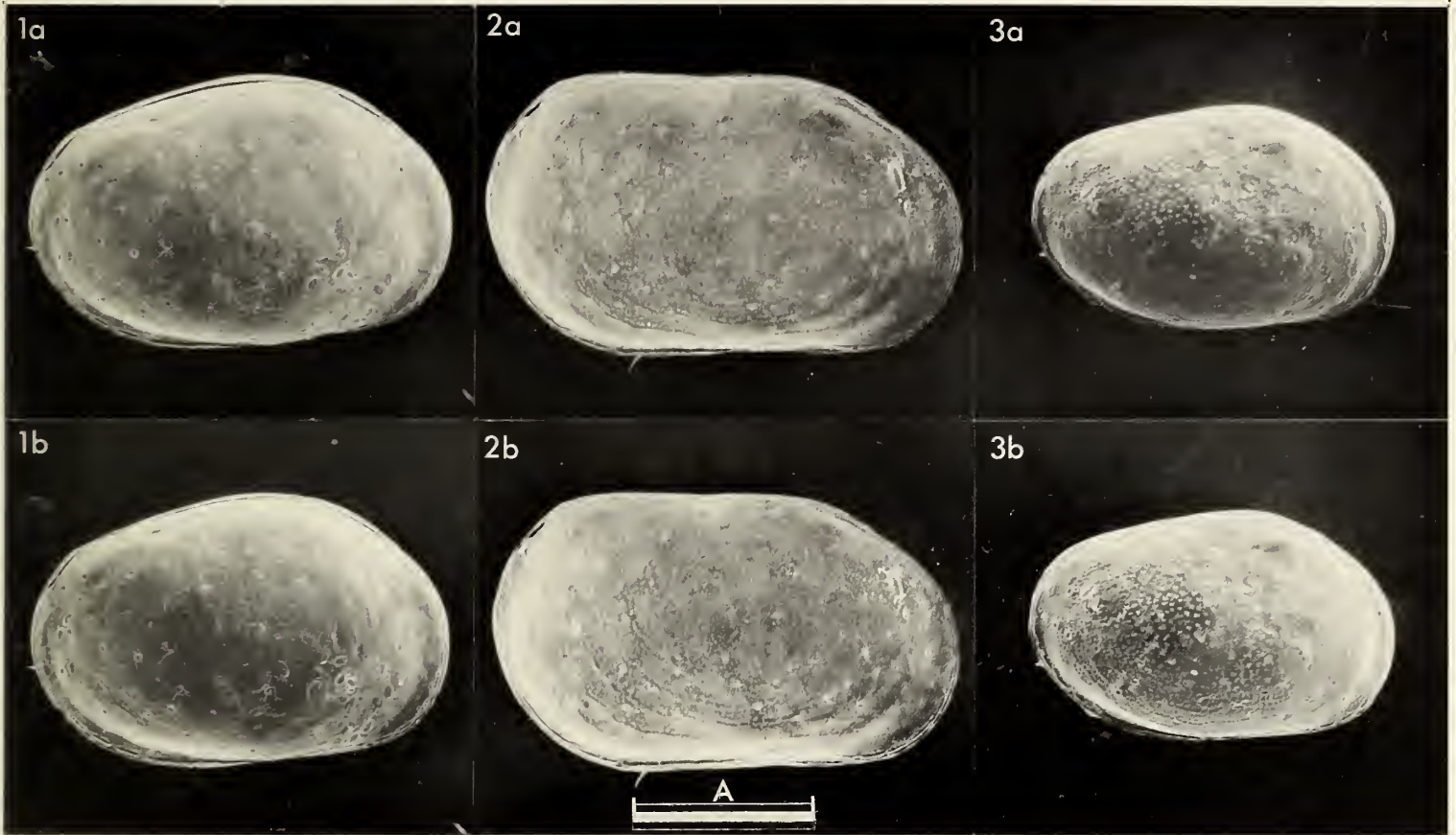
Remarks: The best extant syntype specimens of *L. elliptica* were found to be those from the Guernsey locality. In NW Europe this species, as late as 1938 (Klie, *Tierwelt Dtl.* **34**, 201), was considered synonymous with *L. rhomboidea* (Fischer) and in earlier times often confused with *Hirschmannia viridis* (O. F. Müller). Both latter species have recently been rehabilitated (see *Stereo-Atlas of Ostracod Shells*, **3**, 81–90, 1976, and **2**, 149–156, 1975, respectively).

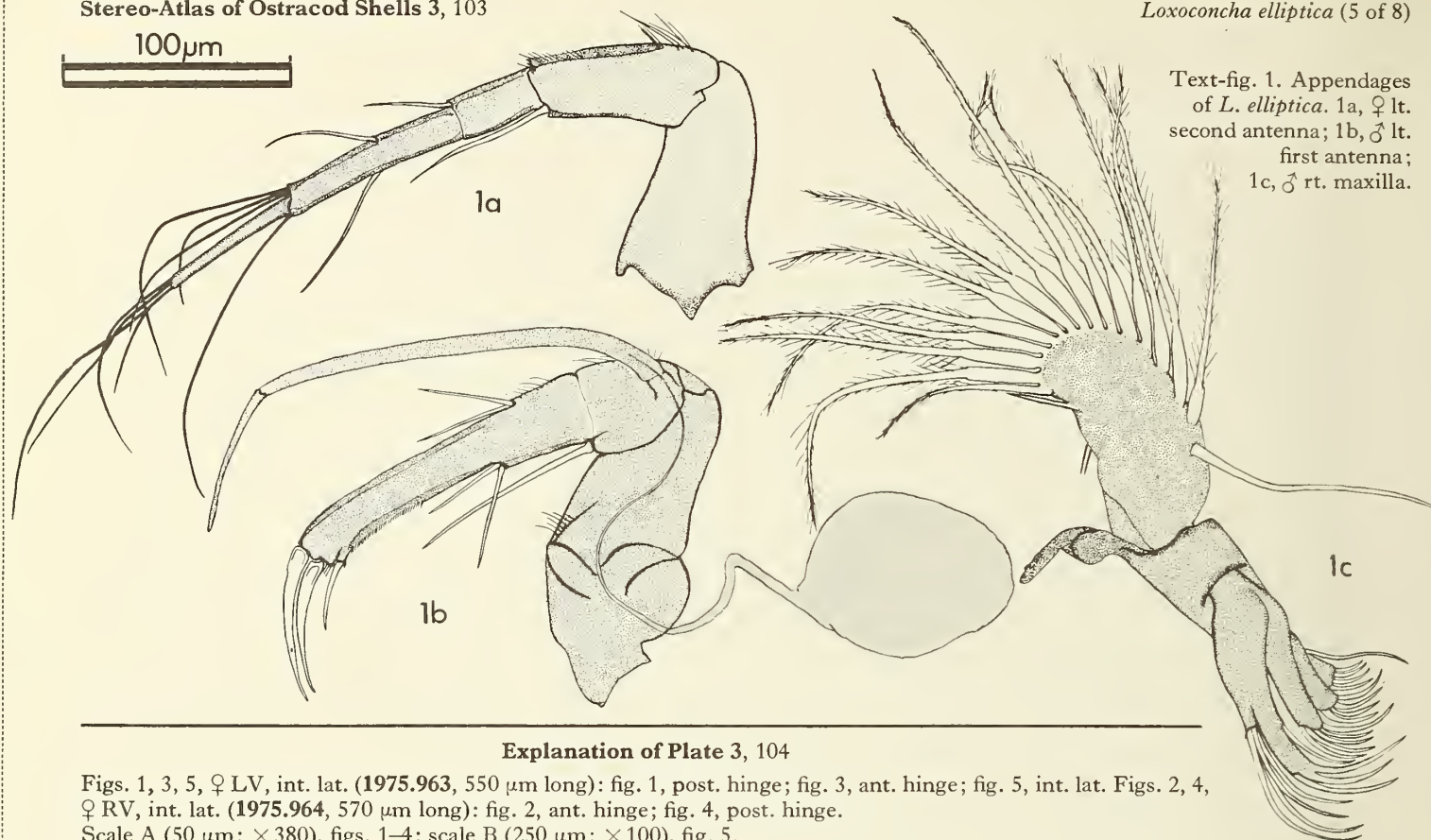
Distribution: Records from the Mediterranean coast of *L. elliptica* are often incorrect (e.g. Uffenorde, op. cit.), but Gauthier's excellent figures of his *Cythere* sp. (= *L. gauthieri* Klie) prove its occurrence in N Africa, while material from the shore of W Italy is illustrated herein. *L. elliptica* is invariably a brackish water species confined to estuaries, lagoons and pools throughout NW Europe and probably the whole of the Mediterranean. It is known from the Pleistocene of Britain, but earlier occurrences are not known to us.

Explanation of Plate 3, 102

Fig. 1, ♀ car., ext. vent. (**1975.960**, 570 µm long); fig. 2, ♂ car., ext. dors. (**1975.961**, 650 µm long); fig. 3, ♂ LV, ext. lat. (**1975.962**, 610 µm long).

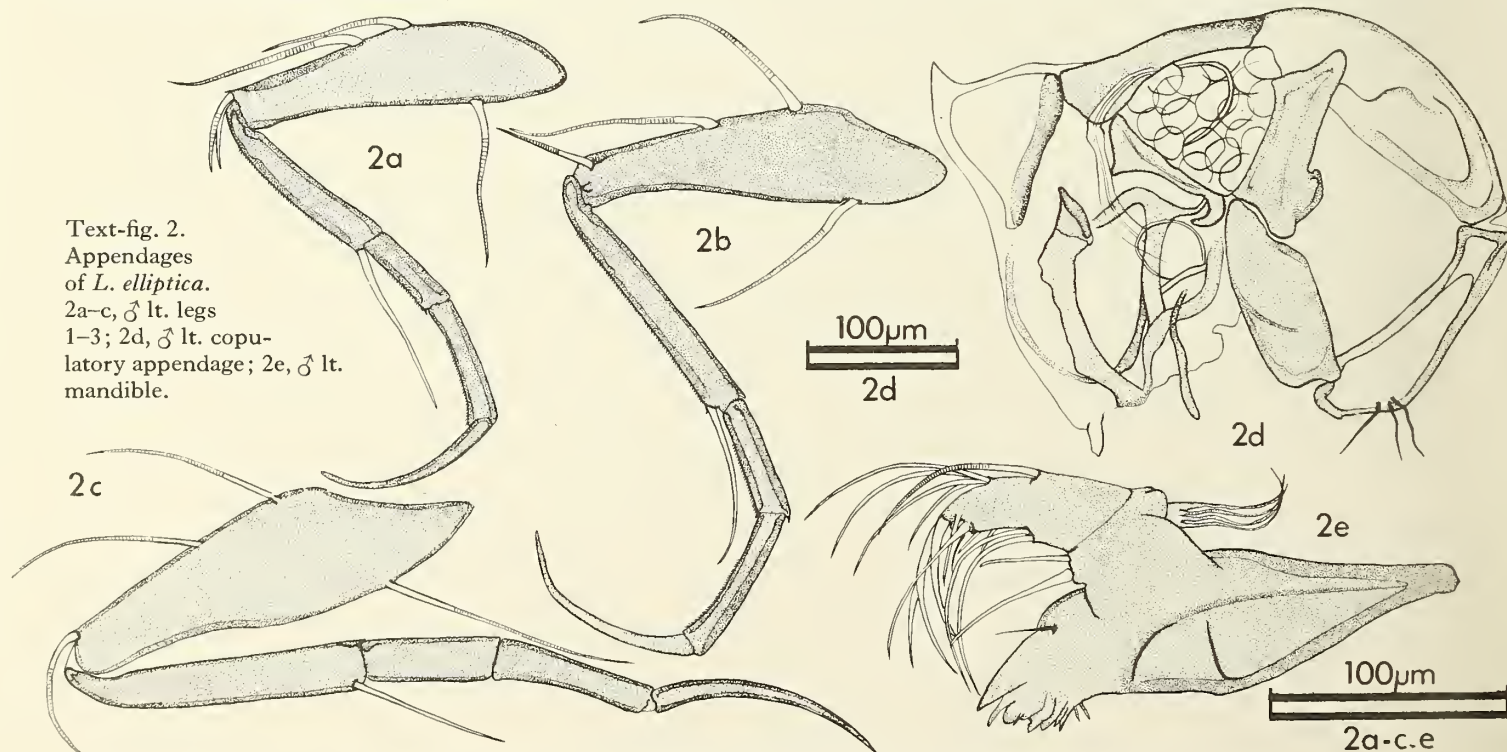
Scale A (250 µm; ×100), figs. 1–3.





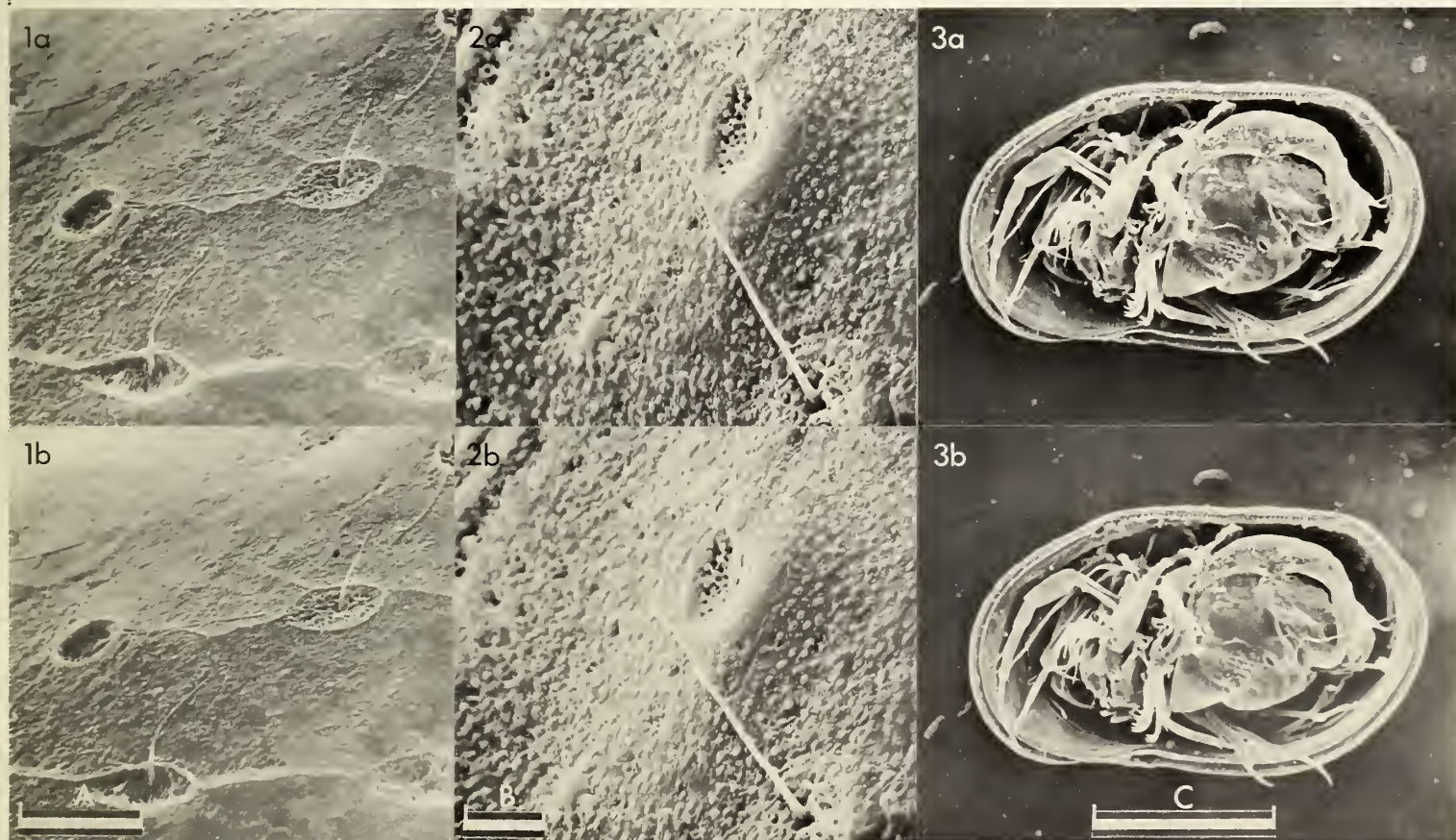
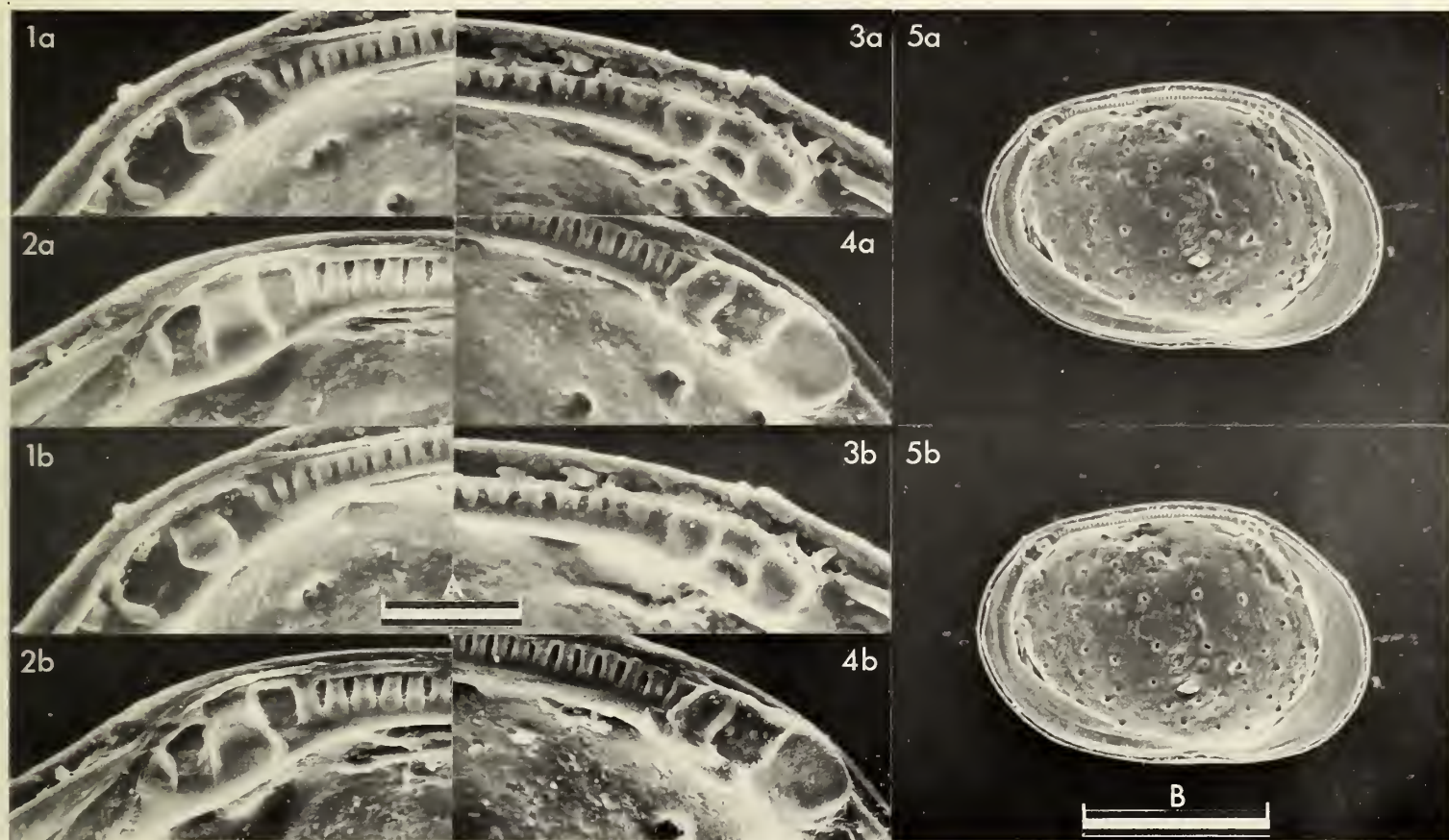
Explanation of Plate 3, 104

Figs. 1, 3, 5, ♀ LV, int. lat. (1975.963, 550 µm long): fig. 1, post. hinge; fig. 3, ant. hinge; fig. 5, int. lat. Figs. 2, 4, ♀ RV, int. lat. (1975.964, 570 µm long): fig. 2, ant. hinge; fig. 4, post. hinge. Scale A (50 µm; × 380), figs. 1–4; scale B (250 µm; × 100), fig. 5.



Explanation of Plate 3, 106

Fig. 1, ♀ car., detail of ant. dors. region showing sieve-pores (1975.966, 590 µm long); fig. 2, ♂ car., detail of ant. dors. region showing fine ornament & sieve-pores (1975.967, 620 µm long); fig. 3, ♂ RV, int. lat. showing soft parts (1975.965, 630 µm long). Scale A (25 µm; × 700), fig. 1; scale B (10 µm; × 1100), fig. 2; scale C (250 µm; × 100), fig. 3.



ON *LOXOCONCHA RUBRITINCTA* RUGGIERI

by John Athersuch
(University of Leicester, England)

Loxoconcha rubritincta Ruggieri, 1964

- 1952 *Loxoconcha guttata* (Norman); G. Ruggieri, *Giorn. Geologia* 2, 74, pl. 4, figs. 7–9 (*non Cythere guttata* Norman, 1865).
1964 *Loxoconcha rubritincta* sp. nov. G. Ruggieri, *Pubbl. Staz. zool. Napoli* 33, 521, figs. 8–10.
1968 *Loxoconcha rubritincta* Ruggieri; M. Masoli, *Mem. Mus. Trident. Sci. Nat.* 17, 54, pl. 3, fig. 29, pl. 12, figs. 185–187.
1975 *Loxoconcha geometrica* sp. nov. G. Bonaduce, G. Ciampo & M. Masoli, *Pubbl. Staz. zool. Napoli* 40, suppl. 1, 107, pl. 63, figs. 6–13.
1975 *Loxoconcha rubritincta* Ruggieri; G. Bonaduce, G. Ciampo & M. Masoli, *ibid.*, 110, pl. 63, figs. 1–5.

Holotype: (not figured herein). Ruggieri coll. no. **1464**, Institute of Geology of the University, Palermo, Italy;
♂ LV (*fide* Ruggieri, 1964).

Type locality: Venice beach, Italy; Recent.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. **1976.732** (♀ LV: Pl. 3, 108, fig. 1), **1976.733** (♂ LV: Pl. 3, 108, fig. 2), **1976.734** (♀ RV: Pl. 3, 108, fig. 3), **1976.735** (♂ car.: Pl. 3, 112, figs. 4, 7), **1976.736** (♂ LV: Pl. 3, 112, fig. 2; Pl. 3, 110, fig. 3; Pl. 3, 114, figs. 2, 4), **1976.737** (♂ LV: Pl. 3, 112, fig. 1; Pl. 3, 110, fig. 4), **1976.738** (♂ LV: Pl. 3, 112, fig. 3), **1976.739** (♀ RV: Pl. 3, 112, fig. 5), **1976.740** (♂ RV: Pl. 3, 112, fig. 6; Pl. 3, 114, figs. 1, 3, 5), **1976.741** (♂ car.: Pl. 3, 110, fig. 2), **1976.742** (♀ car.: Pl. 3, 110, fig. 1). **1976.735** coll. alive by J. Athersuch during autumn 1973 off Kyrenia, Cyprus; approx. lat.

Explanation of Plate 3, 108

Fig. 1, ♀ LV, ext. lat. (**1976.732**, 561 µm long); fig. 2, ♂ LV, ext. lat. (**1976.733**, 659 µm long); fig. 3, ♂ RV, detail of ornament (**1976.734**, 524 µm long).
Scale A (250 µm; ×90), figs. 1, 2; scale B (50 µm; ×673), fig. 3.

Figured specimens: 35°21'N, long. 33°18'E, water temp. 26°C, depth 4m, salinity 30‰; in coarse sand. **1976.740** taken (*contd.*) from beach sand coll. by Prof. P. C. Sylvester-Bradley from Dhavlos Bay, Cyprus, during September 1972; approx. lat. 35°25'N, long. 33°55'E. **1976.734**, **738**, **739**, **741**, **742** were associated with sand at 0–11m at other localities off Cyprus. **1976.736**, **737** coll. by Dr G. Bonaduce from the SE coast of Italy. **1976.732**, **733** coll. by Prof. G. Ruggieri from the type locality in beach sand; approx. lat. 45°24'N, long. 12°15'E. Text-figs. 4, 5 are based on **1976.735**.

Diagnosis: Ornament varying from foveolae to large, deep, caperate funnel-shaped fossae. Male copulatory appendages distinctive.

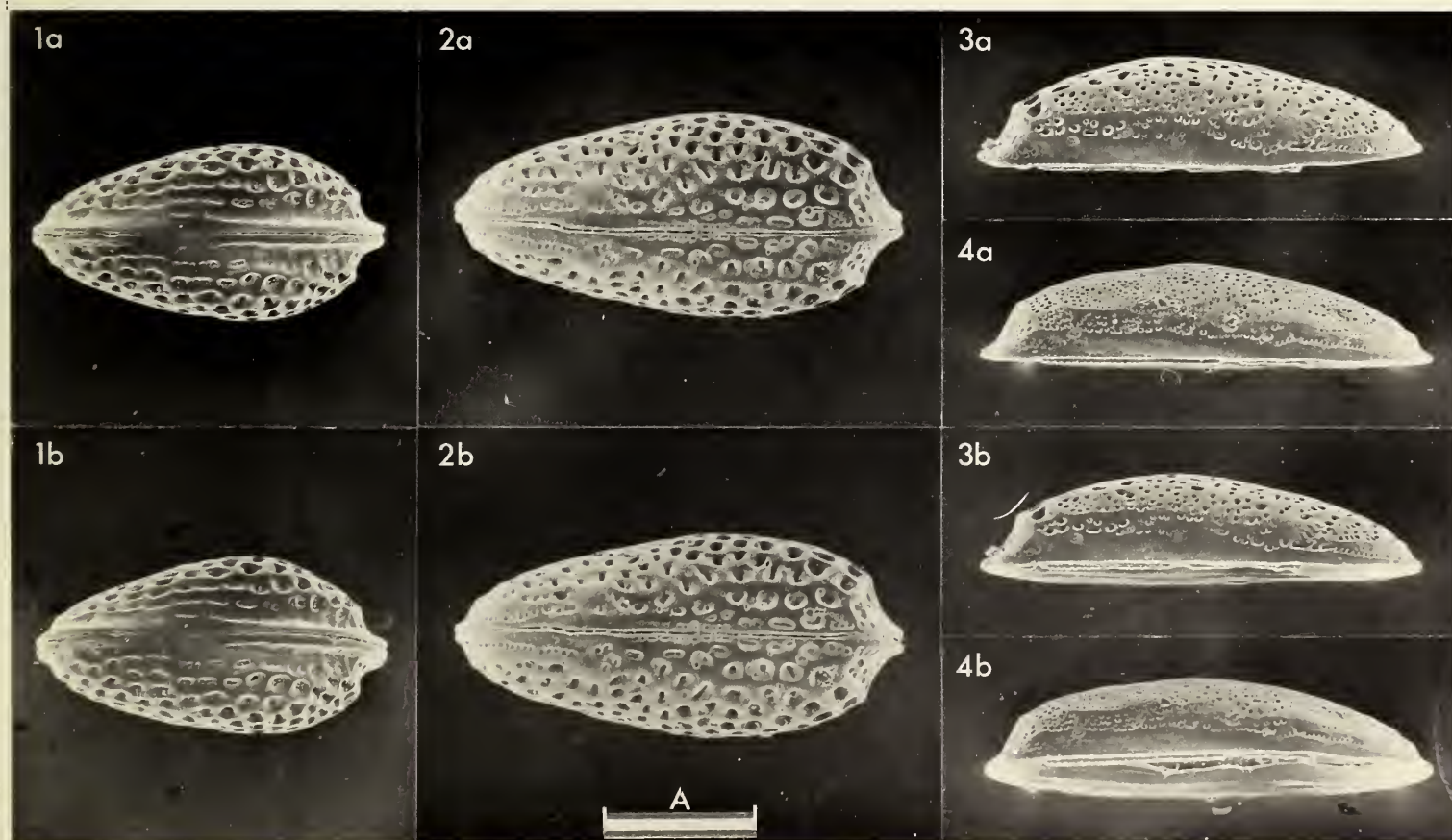
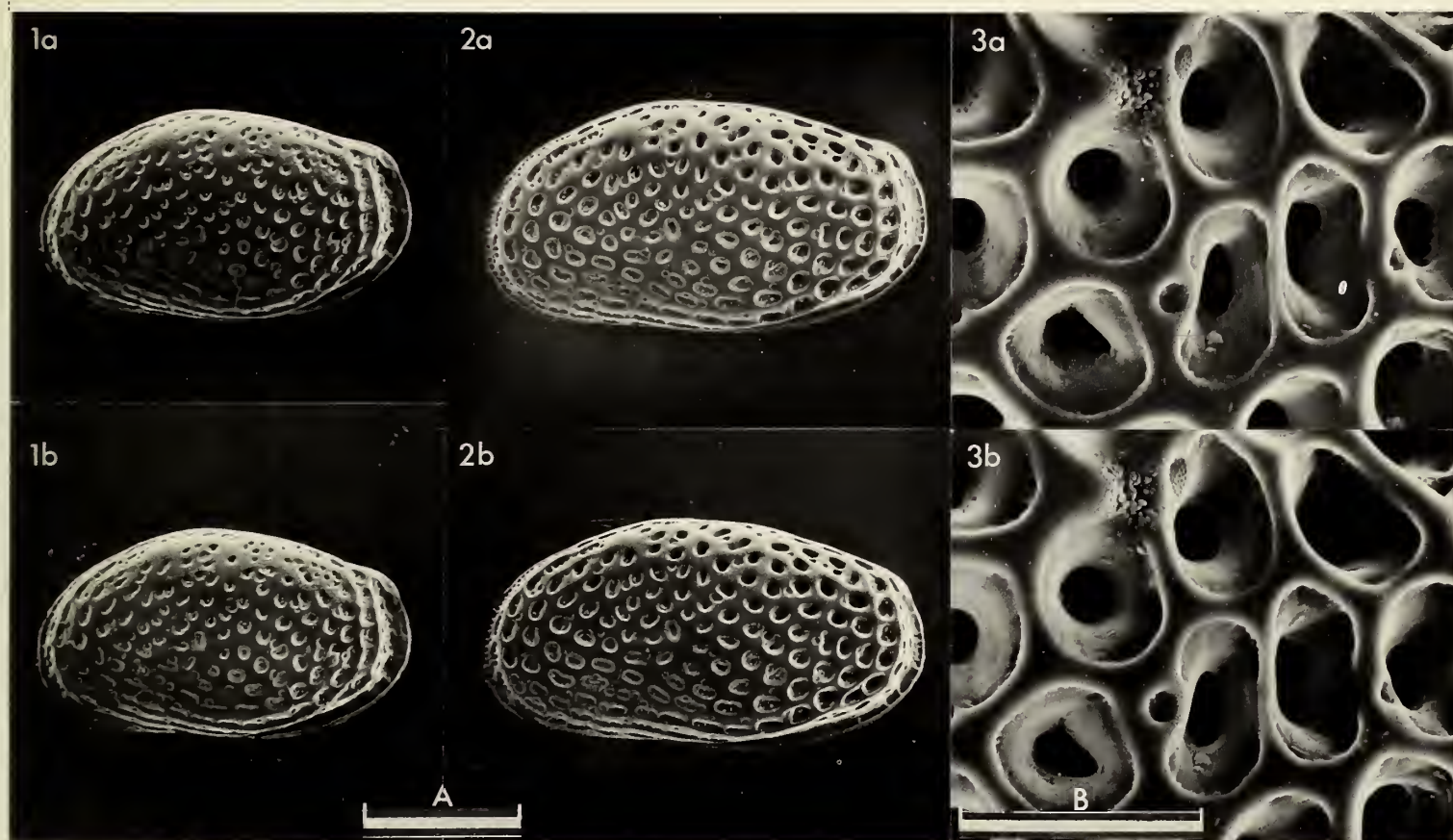
Remarks: The specimens from Italy show great variation in the degree of foveolation and in the number and size of the fossae. The specimens from Cyprus have consistently the largest funnel pores and the males have straighter hingelines than the Italian specimens. Both forms are here regarded as conspecific although considered as distinct species by Bonaduce, Ciampo & Masoli (1975). Identical soft parts have been found in the specimens from SE Italy and from Cyprus. Finely ornamented specimens tend to possess foveolae in groups which correspond to sites occupied by larger fossae in the more coarsely ornamented forms (see Text-figs. 1–3). Males more elongate and less tumid than females.

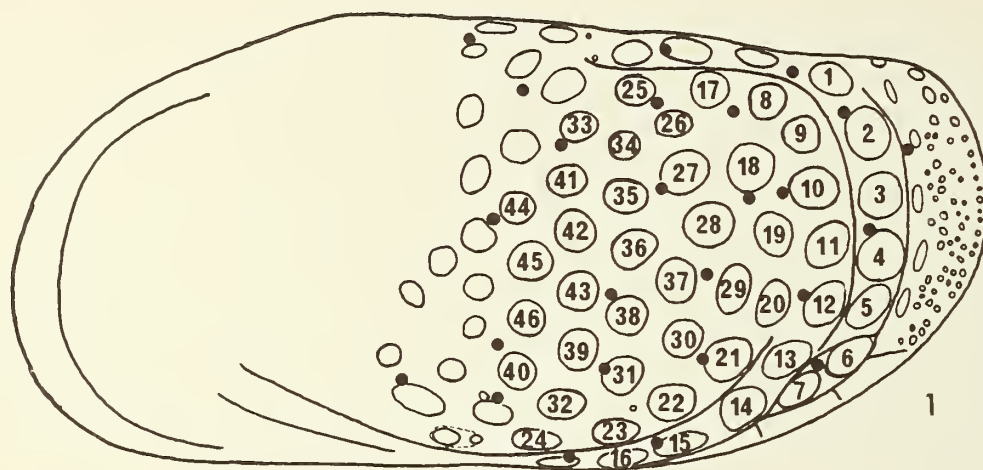
L. angustata Brady, 1869, could be considered as a possible senior synonym of *L. rubritincta*. The types are not known and are presumed lost, and the original illustrations and description are so poor that I regard *L. angustata* as a *nomen dubium*.

Distribution: Recent, marine: Italy and Cyprus (herein); Venice, Italy (Ruggieri, 1952; Masoli, op. cit.); Tunisia (author's coll.).

Explanation of Plate 3, 110

Fig. 1, ♀ car., ext. vent. (**1976.742**, 549 µm long); fig. 2, ♂ car., ext. dors. (**1976.741**, 683 µm long); fig. 3, ♂ LV, ext. dors. (**1976.736**, 671 µm long); fig. 4, ♂ LV, ext. dors. (**1976.737**, 683 µm long).
Scale A (250 µm; ×90), figs. 1–4.

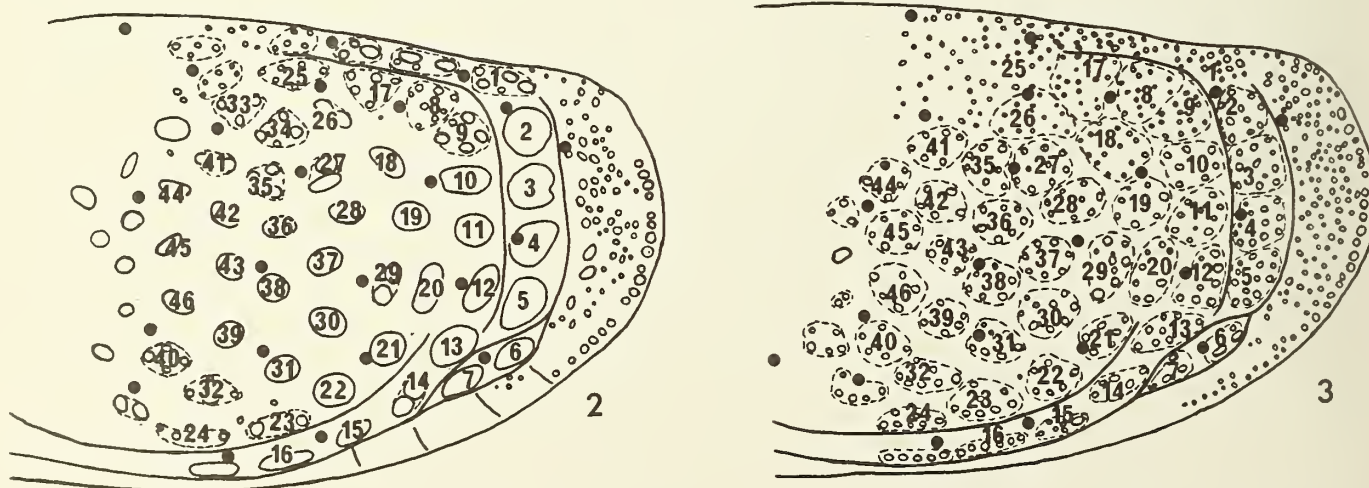




Text-fig. 1. Distribution of fossae and foveolae in *L. rubritincta*, post. ♂ LV (1976.738). See Pl. 3, 112, fig. 3. Circles represent fossa and foveolae, black dots sieve pores.

Explanation of Plate 3, 112

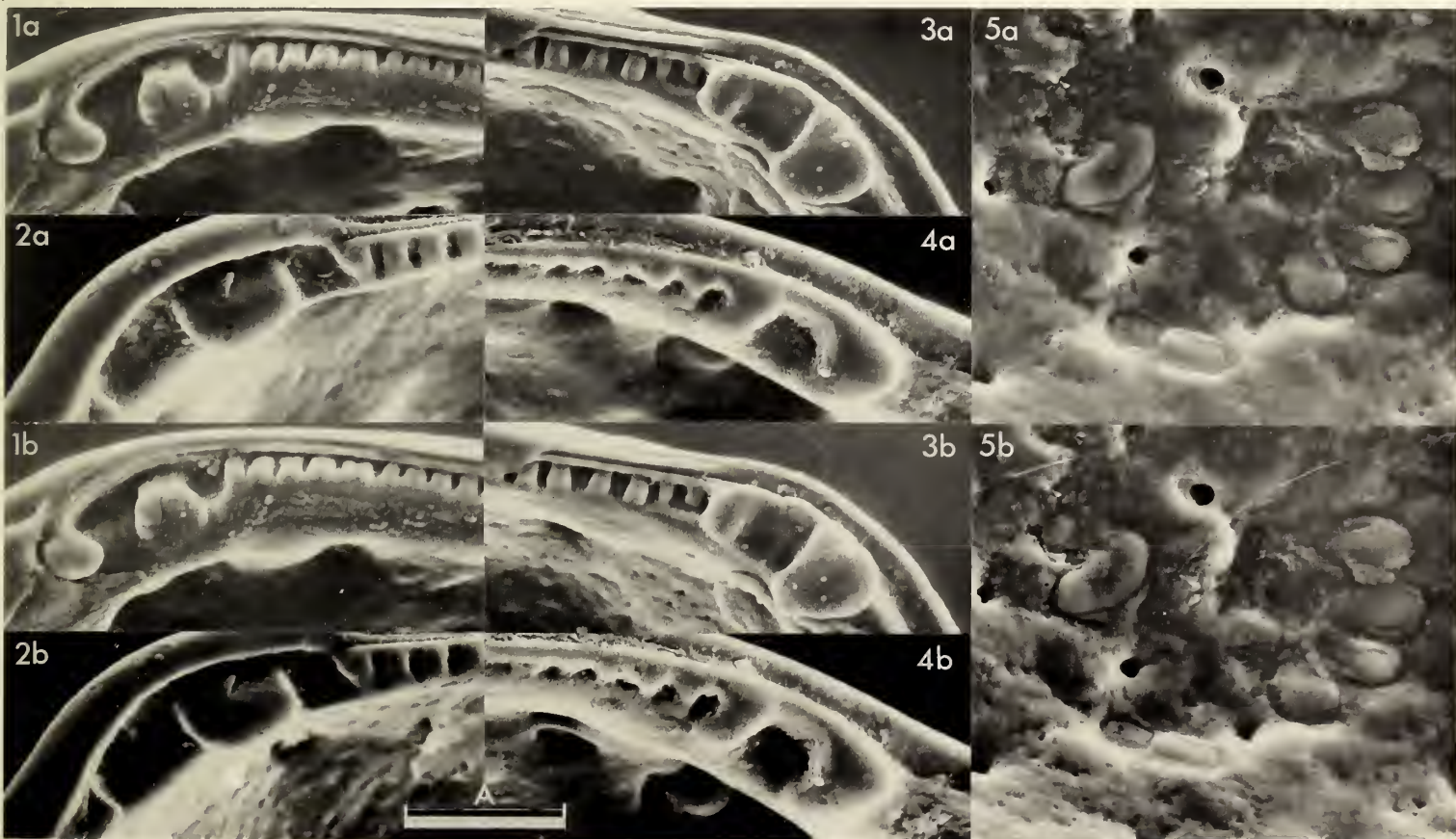
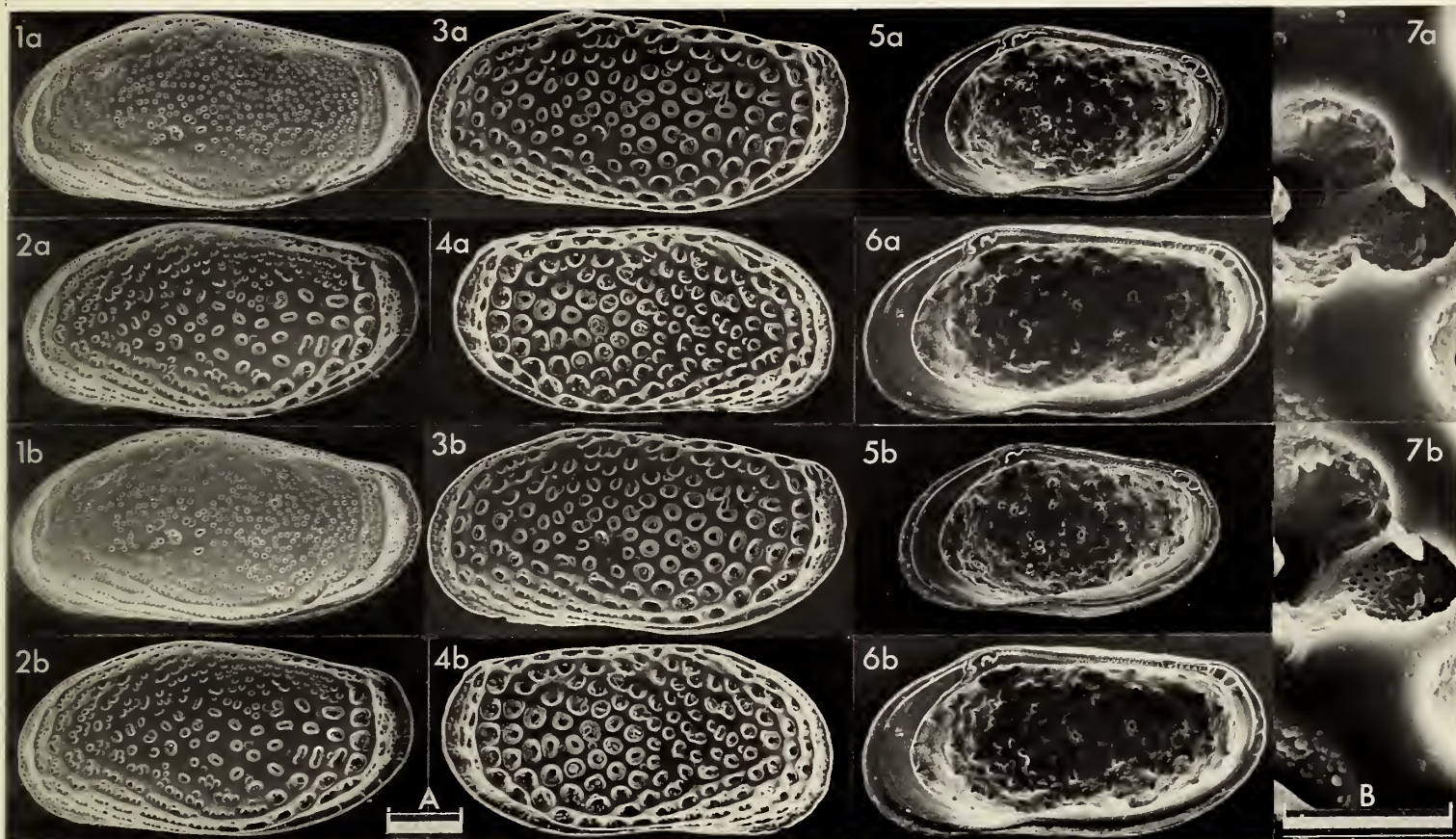
Fig. 1, ♂ LV, ext. lat. (1976.737, 683 μ m long); fig. 2, ♂ LV, ext. lat. (1976.736, 671 μ m long); fig. 3, ♂ LV, ext. lat. (1976.738, 671 μ m long); fig. 4, ♂ RV, ext. lat. (1976.735, 646 μ m long); fig. 5, ♀ RV, int. lat. (1976.739, 537 μ m long); fig. 6, ♂ RV, int. lat. (1976.740, 671 μ m long); fig. 7, ♂ RV, sieve pore (1976.735, 646 μ m long).
Scale A (125 μ m; $\times 82$), figs. 1–6; scale B (25 μ m; $\times 940$), fig. 7.

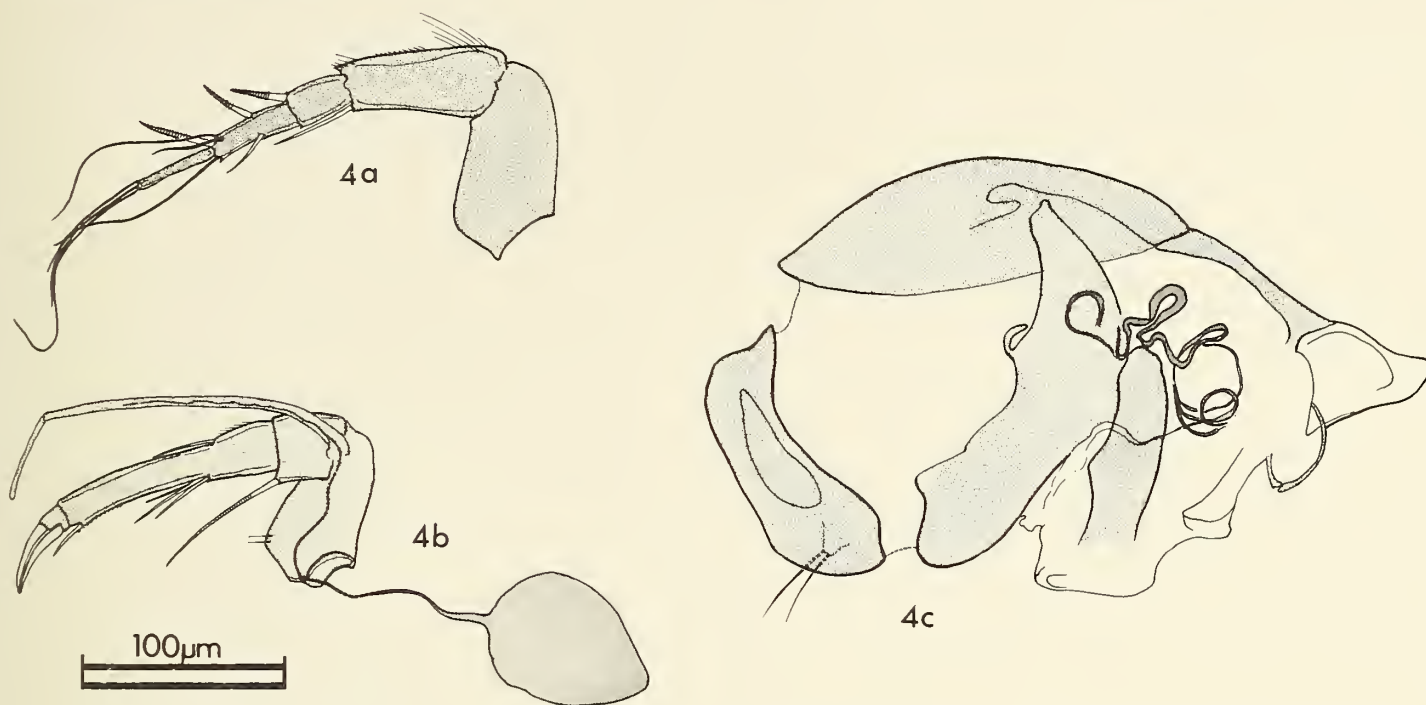


Text-figs. 2, 3. Distribution of fossae and foveolae in *L. rubritincta*. 2. Post. ♂ LV (1976.736). See Pl. 3, 112, fig. 2. 3. Post. ♂ LV (1976.737). See Pl. 3, 112, fig. 1. Circles represent fossae and foveolae, black dots sieve pores.

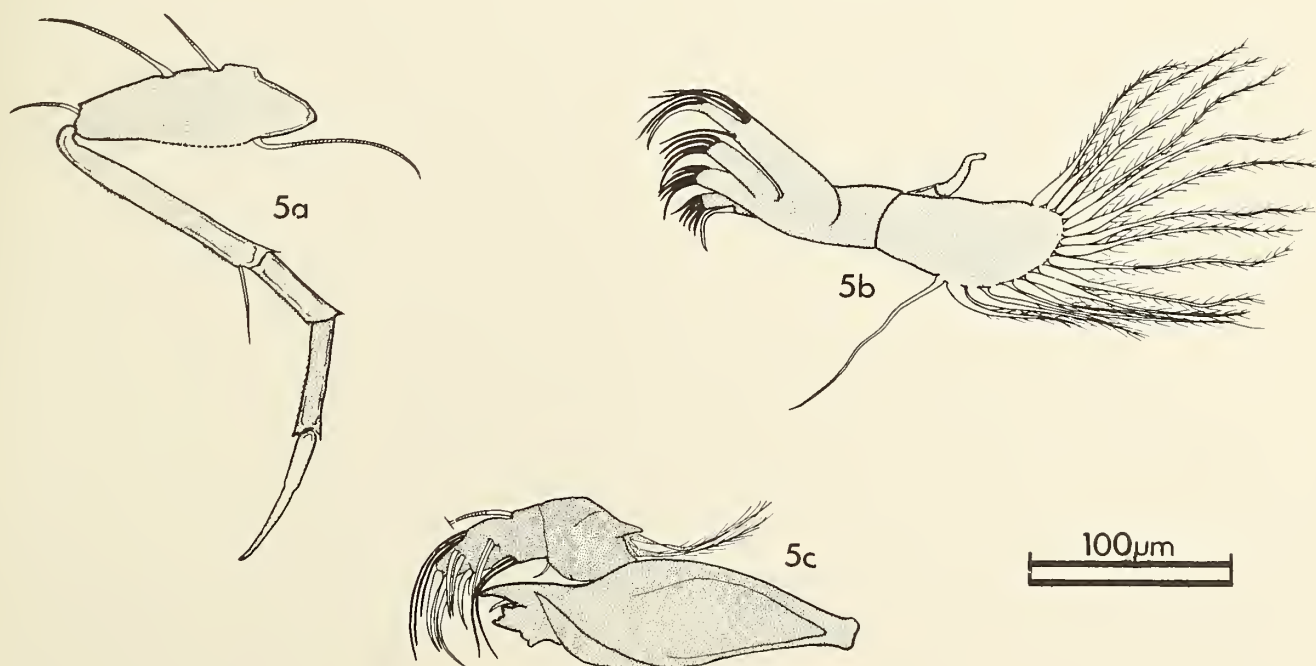
Explanation of Plate 3, 114

Figs. 1, 3, ♂ RV, terminal hinge elements (1976.740); figs. 2, 4, ♂ LV, terminal hinge elements (1976.736); fig. 5, ♂ RV, int. musc. sc. (1976.740).
Scale A (50 μ m; $\times 530$), figs. 1–5.





Text-fig. 4. Appendages of ♂ *L. rubritincta*. 4a, first lt. antenna; 4b, second lt. antenna; 4c, rt. copulatory appendage.



Text-fig. 5. Appendages of ♂ *L. rubritincta*. 5a, leg; 5b, maxilla; 5c, mandible.

ON *SAGMATOCY THERE* *NAPOLIANA* (PURI)

by John Athersuch
(University of Leicester, England)

Genus *SAGMATOCY THERE* gen. nov.

Type-species: *Loxoconcha napoliana* Puri, 1963

Derivation of name: Greek *Sigma*, *sagmatos*, a saddle + *Cythere*.

Diagnosis: Carapace elongate, quadrangular, sharply truncate posteriorly. Ornament strongly reticulate with post-ocular sinus in male. Prominent pore conuli. Lower of middle two adductor muscle scars is larger; frontal scar U-shaped. Fulcral point very prominent, surrounding deep fulcral notch. Hinge gongylodont, median element finely crenulate. Posterior element strongly lobed and strongly curved.

Remarks: *S. napoliana* (Puri) retains the basic gongylodont hinge characteristic of *Loxoconcha* but differs in having enlarged, lobed and curved posterior hinge elements, different muscle scar pattern (cf. diagnoses), reticulate ornament, pore conuli, quadrangular outline and a post-ocular sinus in the male. *Sagmatocythere* probably includes several other species previously considered in *Loxoconcha*. For example, *L. versicolor* Müller and *L. littoralis* Müller, not examined in the present study but illustrated by Bonaduce, Ciampo & Masoli, 1975 (*Pubbl. Staz. zool. Napoli* 40, suppl. 1), who considered that these species together with *L. napoliana* formed a distinct group.

Explanation of Plate 3, 118

Fig. 1, ♀ RV, ext. lat. (1976.753, 524 µm long); fig. 2, ♀ LV, ext. lat. (1976.754, 512 µm long); fig. 3, ♂ LV, ext. lat. (1976.759, 512 µm long).

Scale A (250 µm; ×115), figs. 1–3.

Sagmatocythere napoliana (Puri, 1963)

1894 *Loxoconcha mediterranea* sp. nov. G. W. Müller, *Fauna Flora Golf. Neapel* 21, 347, pl. 29, figs. 3, 10, pl. 26, figs. 33–42 [*non L. avellana* (Brady, 1866) var. *mediterranea* G. Seguenza, 1885, *Il Naturaliste Siciliano* 4, 57, pl. 2, figs. 11a–d].

1963 *Loxoconcha napoliana* nom. nov. H. S. Puri, *Experientia* 29, 373.

1964 *Loxoconcha napoliana* Puri; G. Ruggieri, *Pubbl. Staz. zool. Napoli* 33, 519, figs. 4, 4a.

1971 *Loxoconcha mediterranea* G. W. Müller; P. J. Barbeito-Gonzalez, *Mitt. Hamburg zool. Mus.* 67, 309, pl. 34, figs. 1a–c, 2a–c.

Lectotype: (here designated). Müller coll. ex-no. 9275; ♀, decalcified car. and soft parts. No catalogue number, but placed on separate, labelled slides; Institut für Spezielle Zoologie und Zoologisches Museum der Humboldt-Universität zu Berlin.

Type locality: Bay of Naples; Recent.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. 1976.753 (♀ RV: Pl. 3, 118, fig. 1), 1976.759 (♀ LV: Pl. 3, 118, fig. 2), 1976.754 (♂ car.: LV, Pl. 3, 118, fig. 3; RV, Pl. 3, 122, fig. 2), 1976.757 (♀ car.: Pl. 3, 120, fig. 3), 1976.755 (♀ car.: Pl. 3, 120, fig. 1), 1976.756 (♀ car.: Pl. 3, 120, fig. 2), 1976.758 (♀ car.: RV, Pl. 3, 122, fig. 1, Pl. 3, 124, figs. 2, 4; LV, Pl. 3, 124, figs. 1, 3, 5), 1976.760 (♀ car.: RV, Pl. 3, 122, fig. 3). Nos. 1976.753–760 coll. from sand at 33m, off Klidhes Island, Cyprus (approx. lat. 35°42'N, long. 34°36'E), by Sqn. Ldr. Chrisp, 1968; none contained soft parts. Text-figs. 1, 2 based on lectotype.

Diagnosis: Irregularly reticulate. Fossae with large soli; separated by undercut muri and apophyses. Simple, often conjunctive pore conuli.

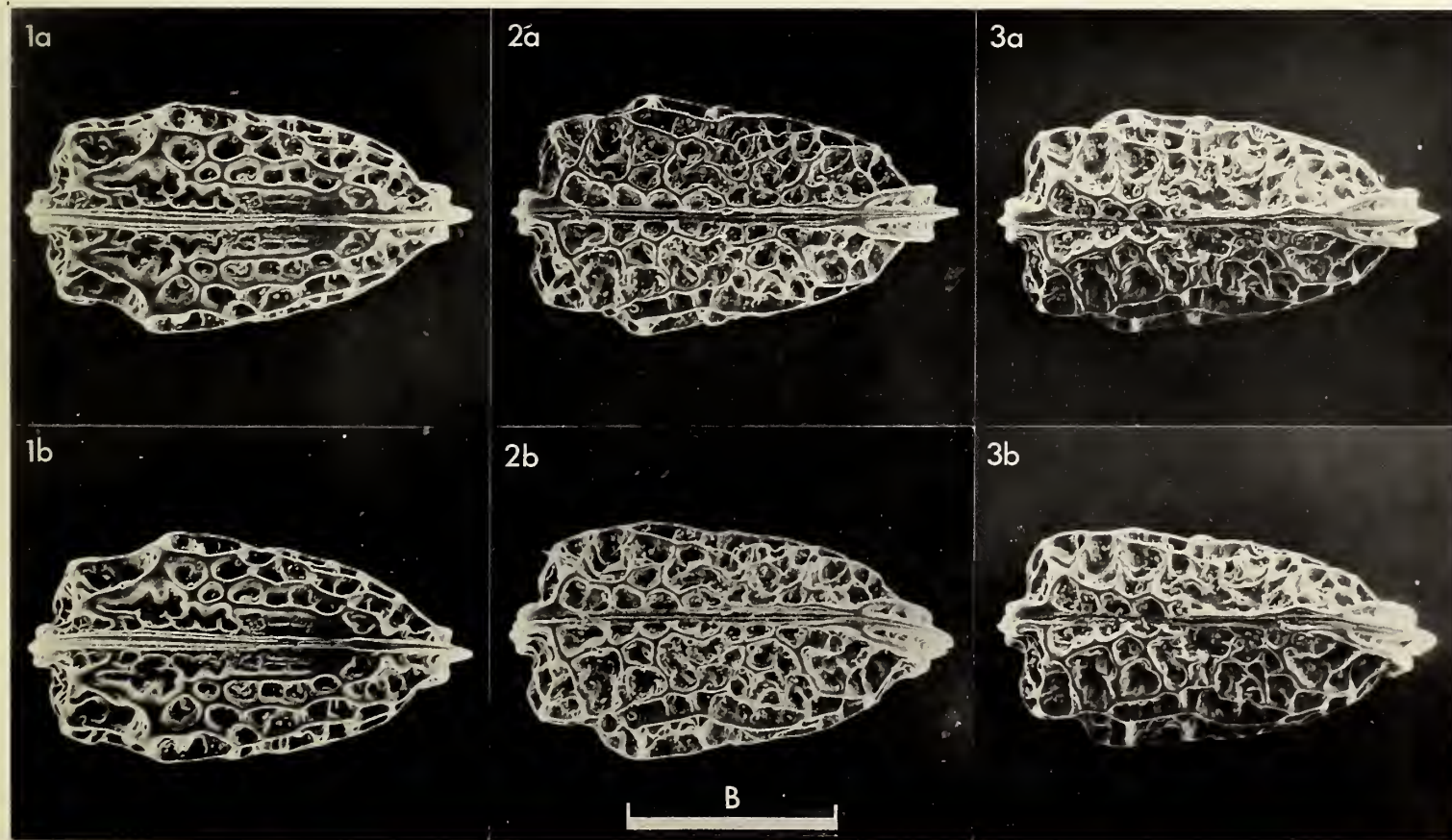
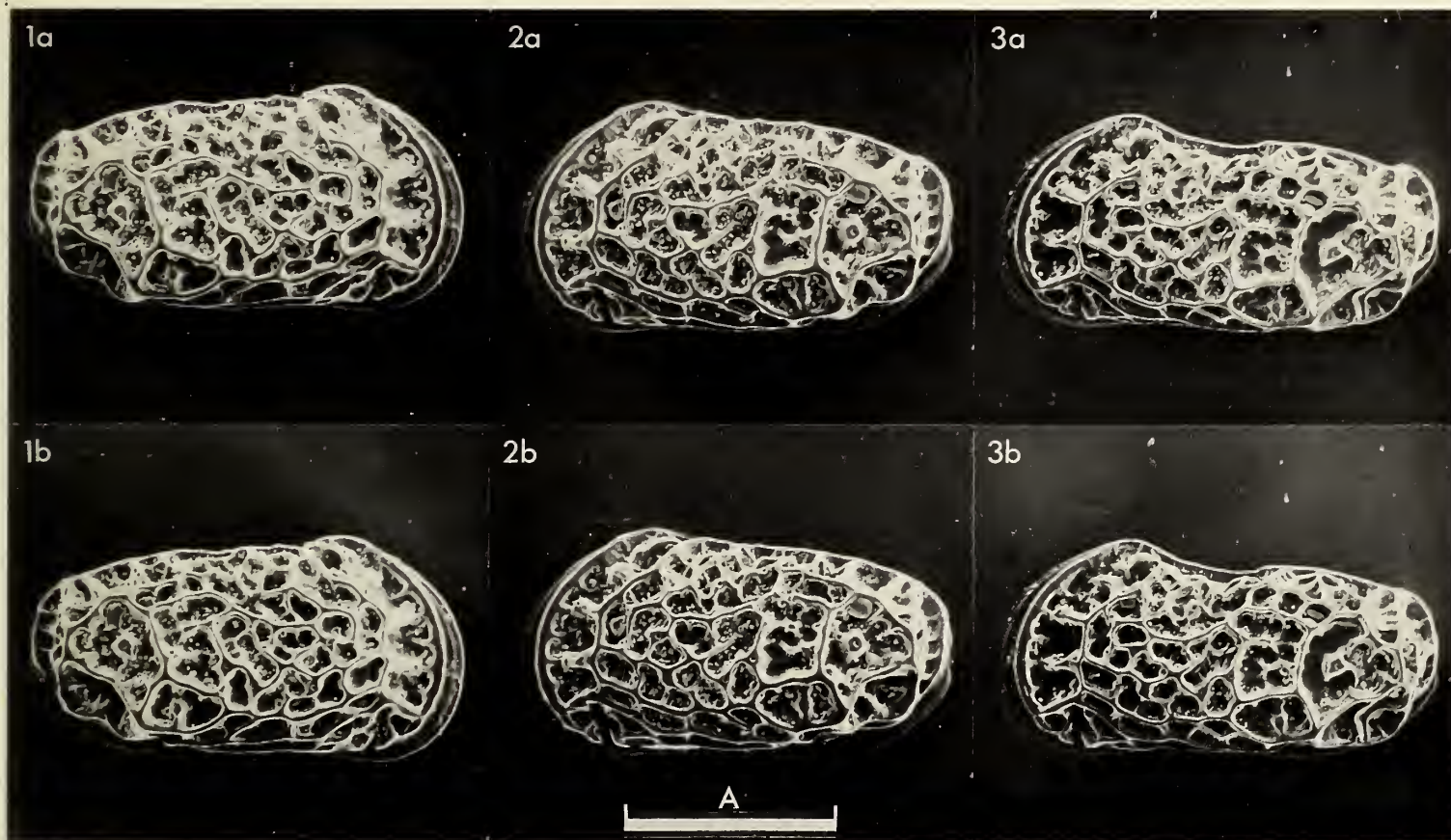
Remarks: *L. napoliana*, proposed as a replacement name for *L. mediterranea* Müller, 1894, *non* Seguenza, 1885, must have the same type specimens as Müller's species. Müller's surviving syntypes have been examined; all are poorly preserved. Specimens described herein from Cyprus were not living at the time of collection, but were, like Müller's, associated with coarse sand and the sea-grass *Posidonia*. Females higher than males, males with a deep dorsal concavity immediately behind the eye. Male copulatory appendages distinctive.

Distribution: Recent: Bay of Naples (Müller, op. cit.), Tuscany (Ruggieri, op. cit.), Cyprus (herein). Miocene, Pliocene, Quaternary of Italy (Ruggieri, op. cit.).

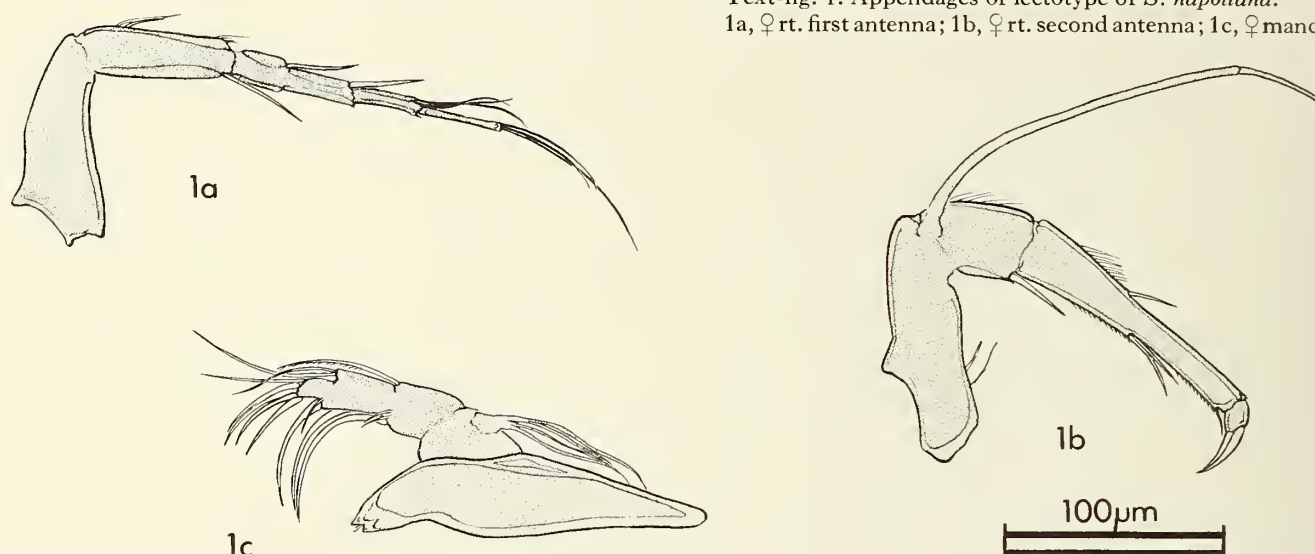
Explanation of Plate 3, 120

Fig. 1, ♀ car., ext. vent. (1976.755, 524 µm long); fig. 2, ♀ car., ext. dors. (1976.756, 500 µm long); fig. 3, ♂ car., ext. dors. (1976.757, 512 µm long).

Scale A (250 µm; ×115), figs. 1–3.



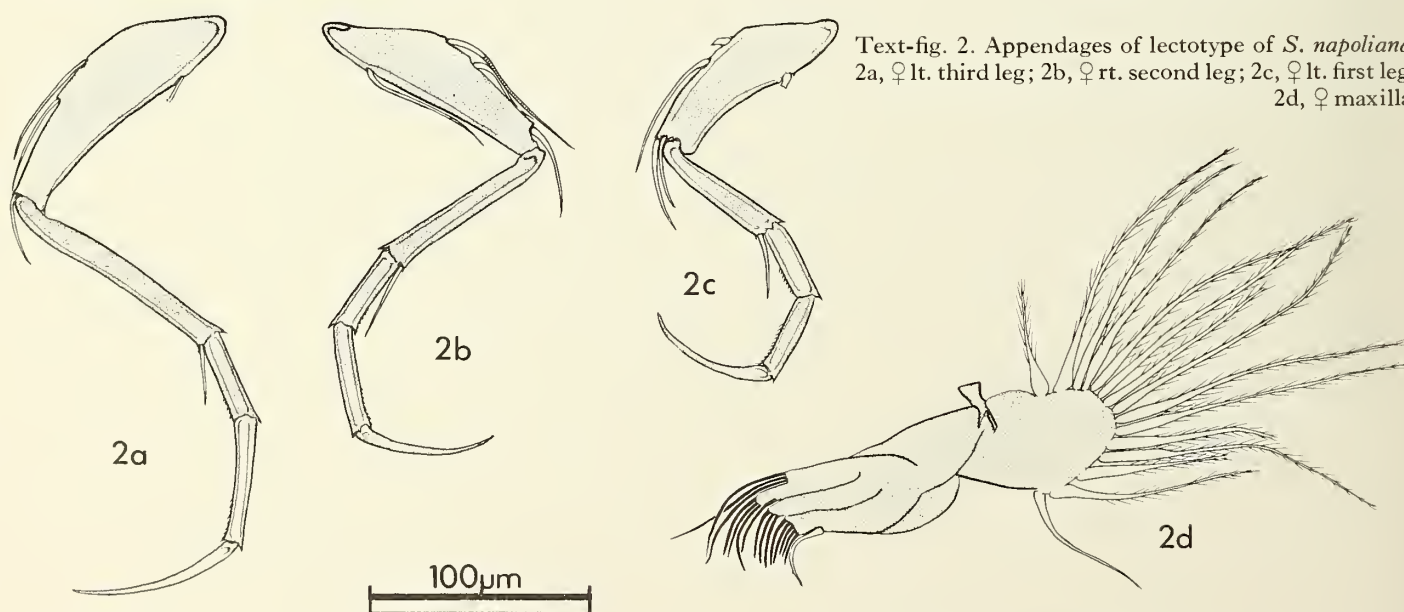
Text-fig. 1. Appendages of lectotype of *S. napoliana*.
1a, ♀ rt. first antenna; 1b, ♀ rt. second antenna; 1c, ♀ mandible.



Explanation of Plate 3, 122

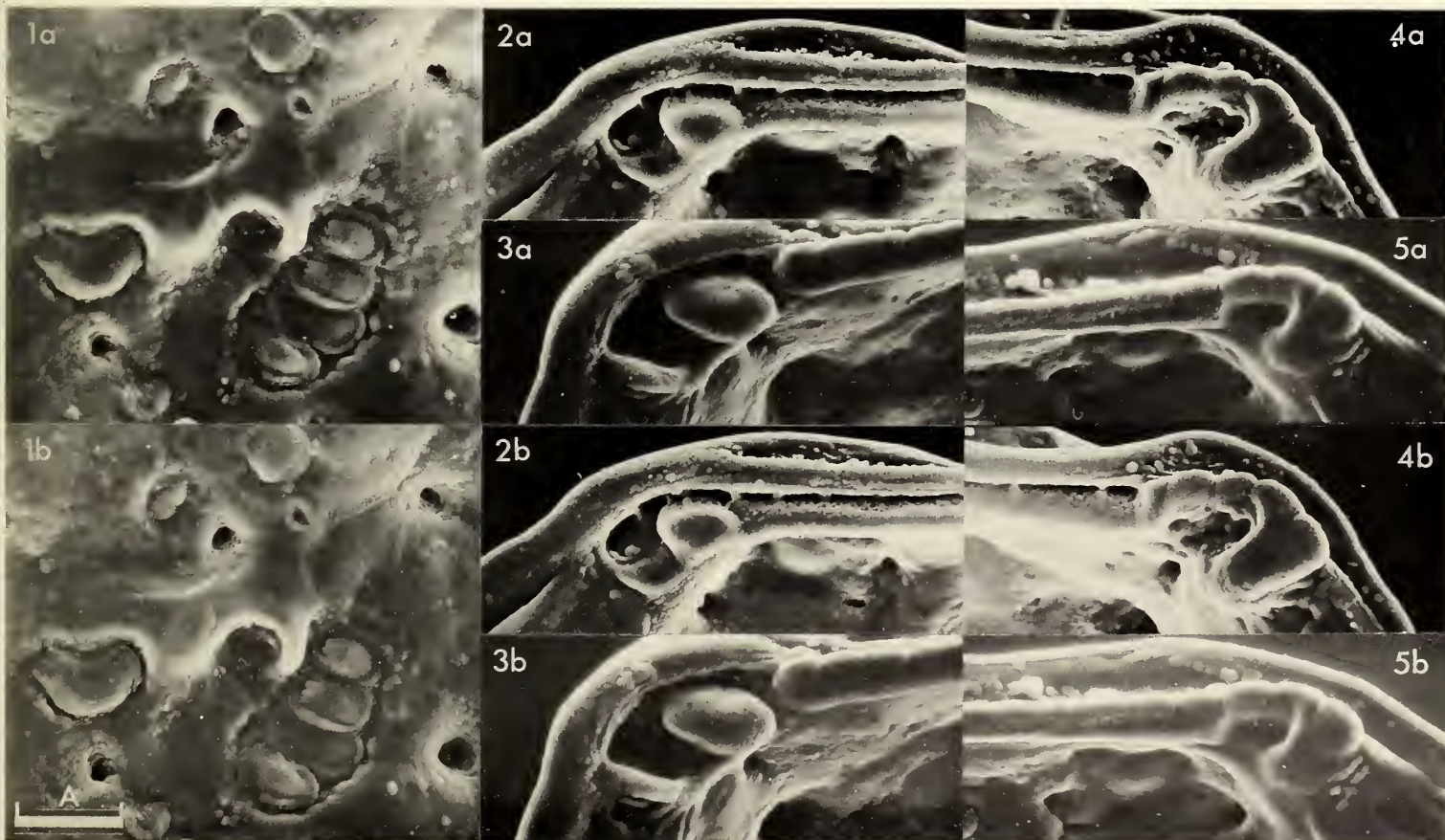
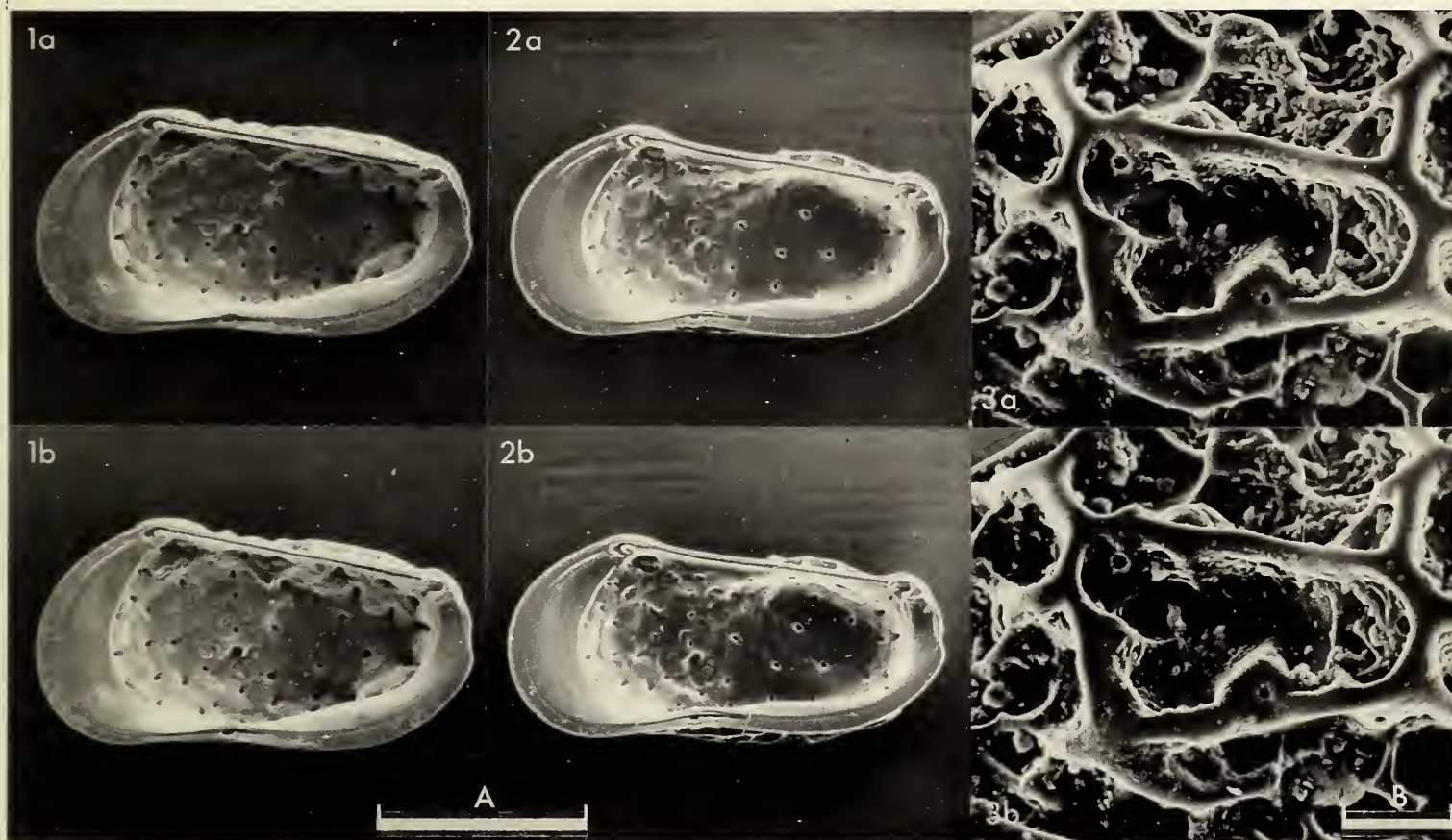
Fig. 1, ♀ RV, int. lat. (1976.758, 512 μm long); fig. 2, ♂ RV, int. lat. (1976.754); fig. 3, ♀ RV, detail of post. ornament (1976.760, 512 μm long).
Scale A (250 μm; × 115), figs. 1, 2; scale B (50 μm; × 290), fig. 3.

Text-fig. 2. Appendages of lectotype of *S. napoliana*.
2a, ♀ lt. third leg; 2b, ♀ rt. second leg; 2c, ♀ lt. first leg;
2d, ♀ maxilla.



Explanation of Plate 3, 124

Fig. 1, ♀ RV, int. musc. sc. (1976.758); figs. 2, 4, ♀ RV, terminal hinge elements (1976.758); figs. 3, 5, ♀ LV, terminal hinge elements (1976.758).
Scale A (25 μm; × 635), figs. 1–5.



ON *CYPRIS SUBGLOBOSA* J. DE C. SOWERBY

by John W. Neale
(University of Hull, England)

Cypris subglobosa J. de C. Sowerby, 1840

- 1840 *Cypris subglobosa* sp. nov. J. de C. Sowerby in J. G. Malcolmsen, *Trans. Geol. Soc. Lond.* ser. 2, **5**, 47, fig. 3.
1886 *Chlamydotheca subglobosa* (Sowerby, *fide* Baird); G. S. Brady, *J. Linn. Soc.* **19**, 300, 301, pl. 38, figs. 24–27a.
1898 *Cypris granulata* sp. nov. E. Daday, *Termés. Füzet.* **21**, 73–75, figs. 36a–f.
1906 *Eurycypris subglobosa* Sow.; W. Vavra, *Zool. Jb.* **23**, 420–422, pl. 24, figs. 9–13.
1912 *Cypris subglobosa* Sowerby; G. W. Müller, *Ostracoda, Das Tierreich* **31**, 180.
1972 *Cypris subglobosa* Sowerby 1840; I. Okubo, *Res. Bull. Shujitsu J. Coll., Okayama* **1**, 61–72, 4 pls., 2 figs. (q.v. for full synonymy).

Type specimens: The repository is unknown.

Type locality: Sichel Hills, India; fossil.

Figured specimens: University of Hull coll. nos. **HU.241.R.5** (juv. RV: Pl. **3**, 130, fig. 1), **HU.241.R.8** (♀ car.: Pl. **3**, 128, fig. 2), **HU.241.R.9** (♀ LV: Pl. **3**, 126, fig. 2; Pl. **3**, 128, fig. 3; Pl. **3**, 132, fig. 1), **HU.241.R.12** (♀ RV: Pl. **3**, 126, fig. 1), **HU.241.R.15** (♀ RV: Pl. **3**, 128, fig. 1; Pl. **3**, 130, fig. 2; Pl. **3**, 132, fig. 2), **HU.241.R.3b** (limbs: Text-figs. 1, 2). **HU.241.R.5**, **8**, **9**, **12**, **15** all from Pond, Moratuwa, Sri Lanka; lat. 6°46'N, long. 79°53'E. **HU.241.R.3b** from estate pond in coconut plantation, Battuluoya, Sri Lanka; lat. 7°43'N, long. 79°50'E.

Explanation of Plate 3, 126

Fig. 1, ♀ RV, ext. lat. (**HU.241.R.12**, 1375 µm long); fig. 2, ♀ LV, ext. lat. (**HU.241.R.9**, 1420 µm long).
Scale A (250 µm; × 73), fig. 1; scale B (250 µm; × 70), fig. 2.

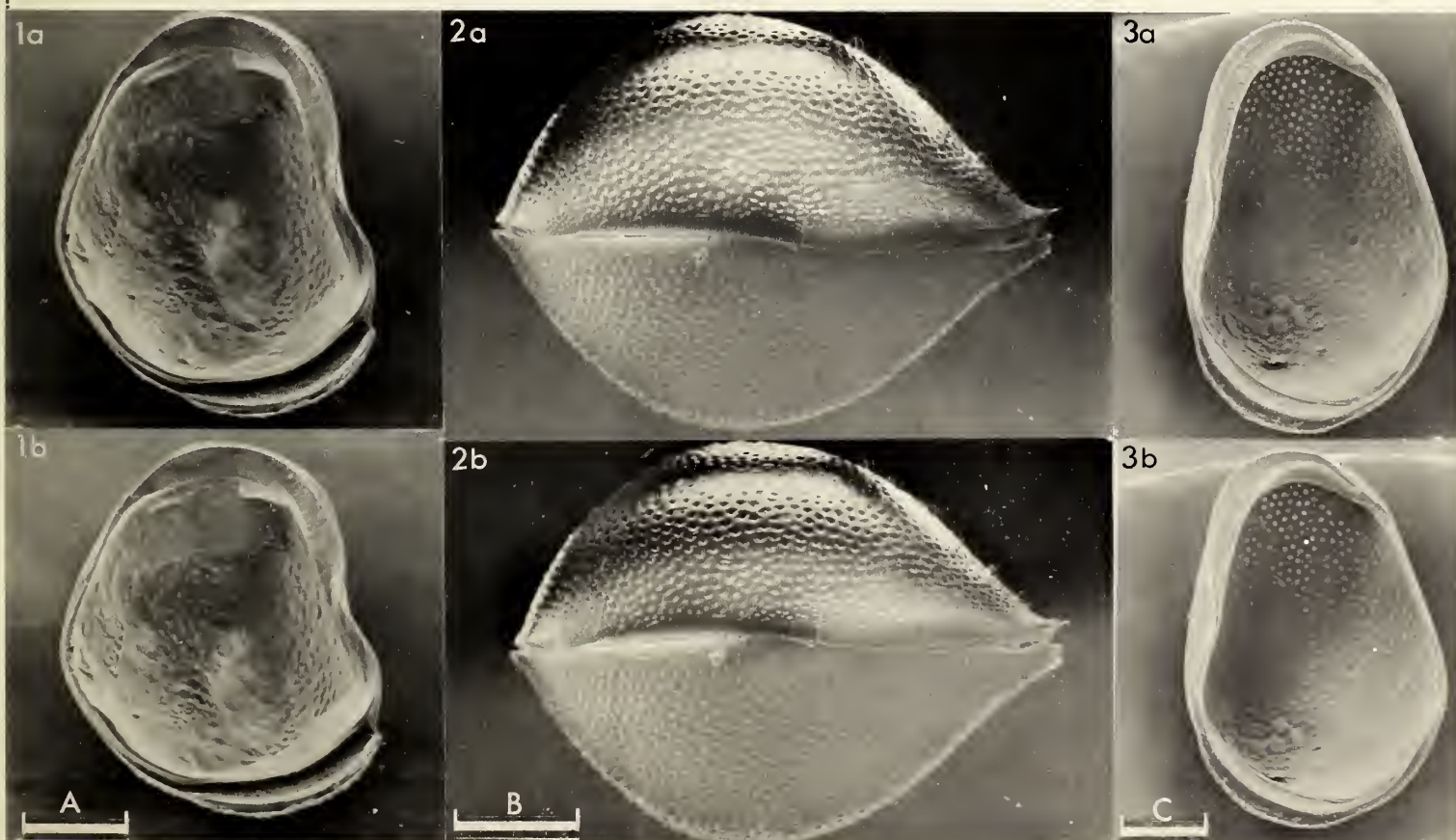
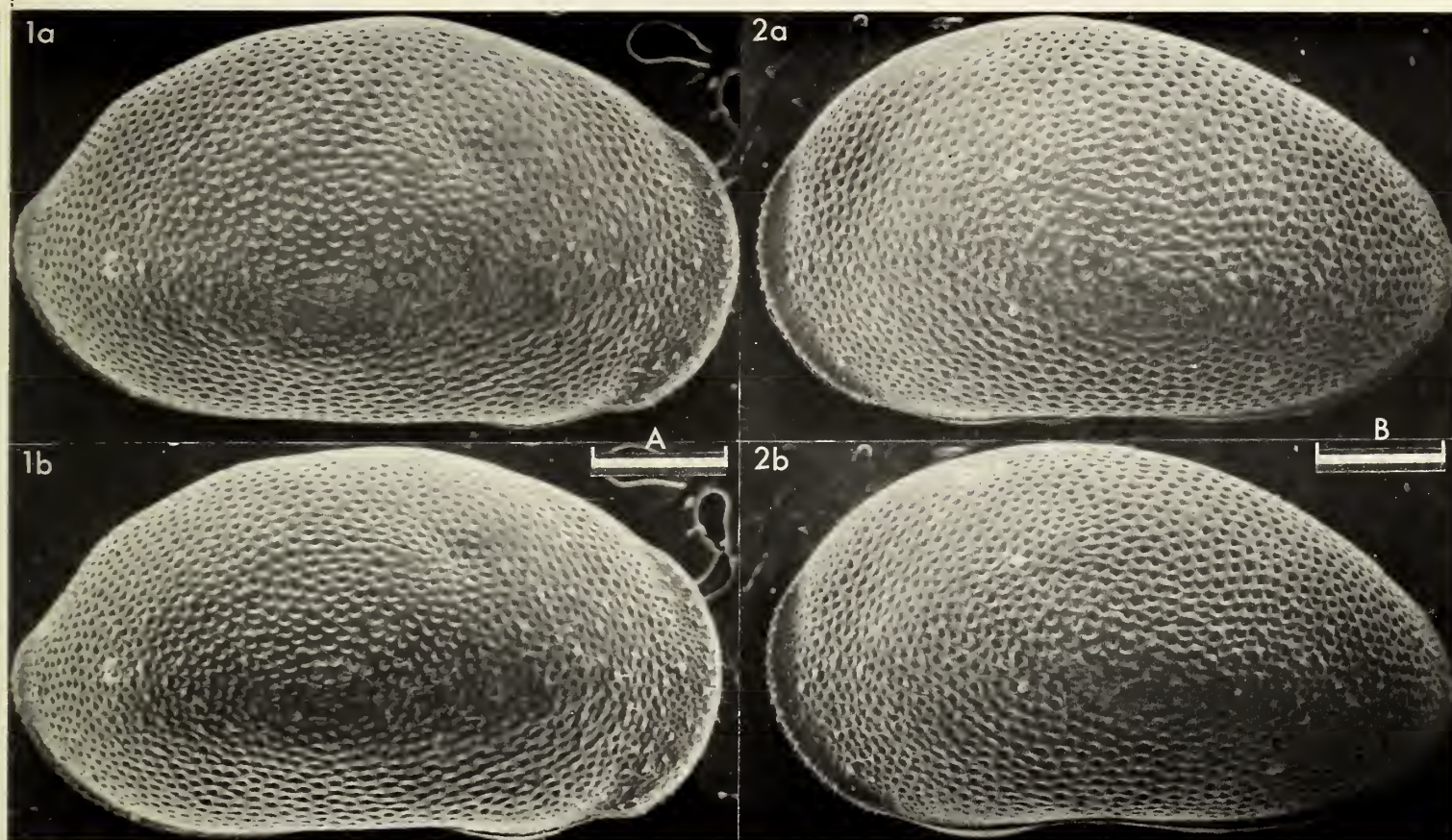
Diagnosis: Valves large, pitted, with posteroventral serrations and with straight or concave posterodorsal margin in right valve. Fresh material is yellowish-green in colour.

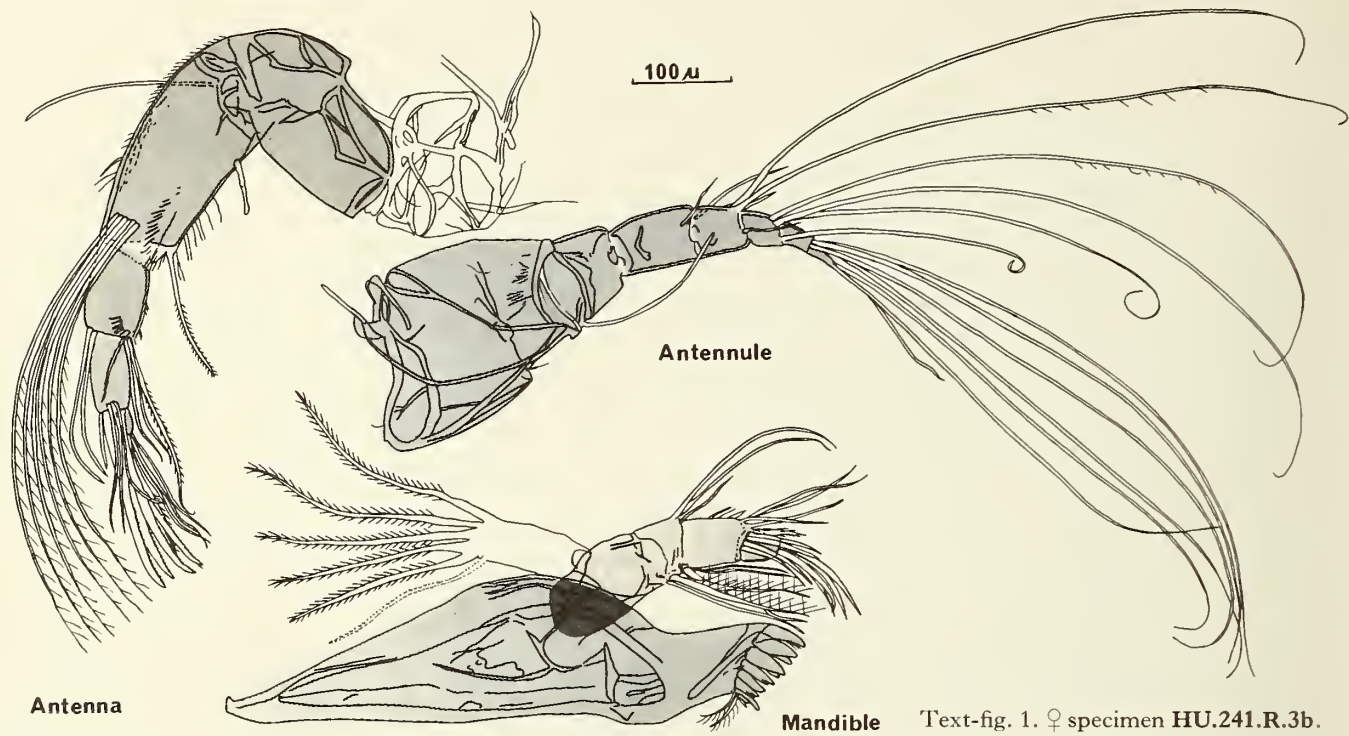
Remarks: This easily recognised *Cypris* has strong pitted ornamentation, the living animal is yellow-green in colour and has an adult length of about 1.4 mm in Sri Lanka where it is generally common and occurs in more than twenty of the localities examined. Based originally (J. de C. Sowerby, 1840) on fossil material from India, this species was regarded as living in India (Baird, 1859) and Sri Lanka (Brady, 1886) and has since been widely reported from Japan and Indonesia in the E to Venezuela and the U.S.A. in the W where minor variations occur. It has also been recorded in Yugoslavia and the U.S.S.R.

The large flange and flange groove in the right valve only develops in the adult (see Pl. **3**, 130, figs. 1, 2) and males have never been found.

Explanation of Plate 3, 128

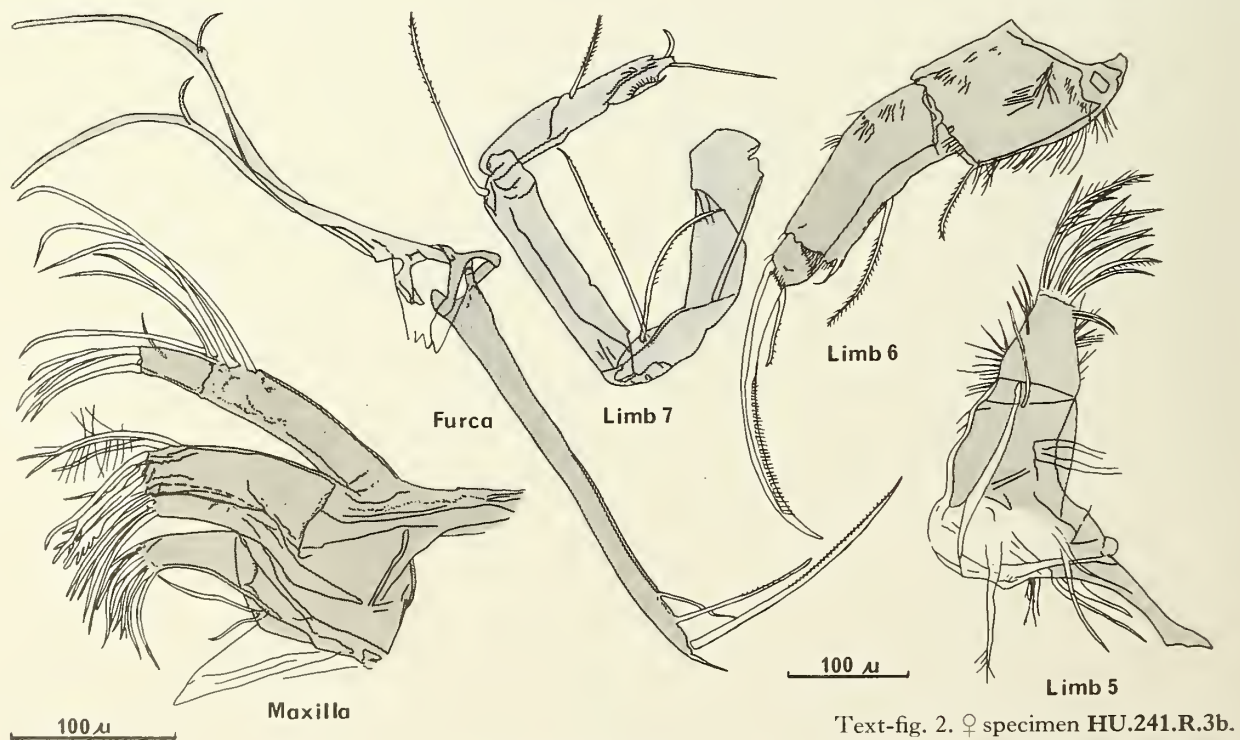
Fig. 1, ♀ RV, int. ant. obl. (**HU.241.R.15**, 1425 µm long); fig. 2, ♀ car., ext. dors. (**HU.241.R.8**, 1400 µm long); fig. 3, ♀ LV, int. ant. obl. (**HU.241.R.9**, 1420 µm long).
Scale A (250 µm; × 57), fig. 1; scale B (250 µm; × 70), fig. 2; scale C (250 µm; × 45), fig. 3.





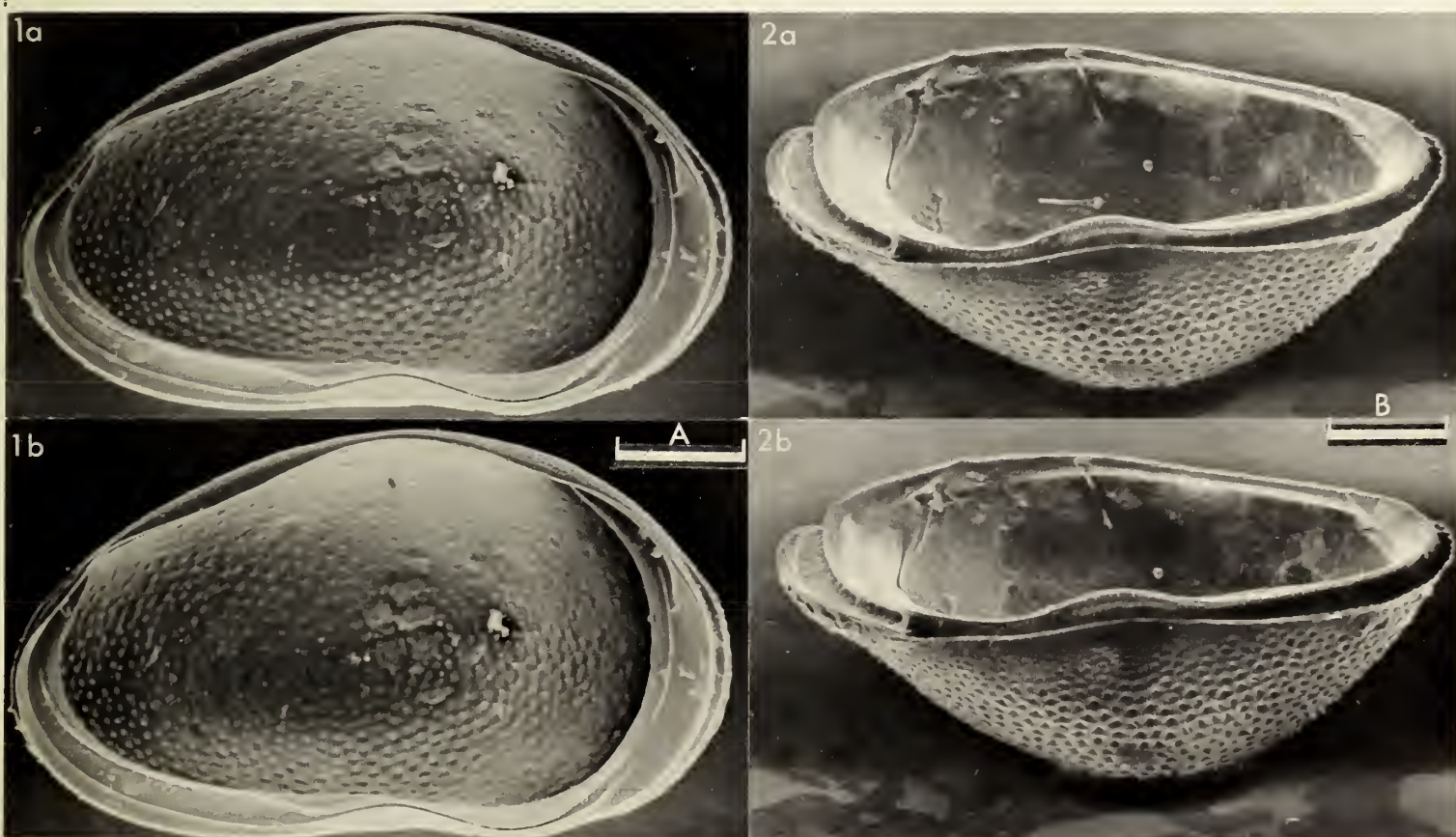
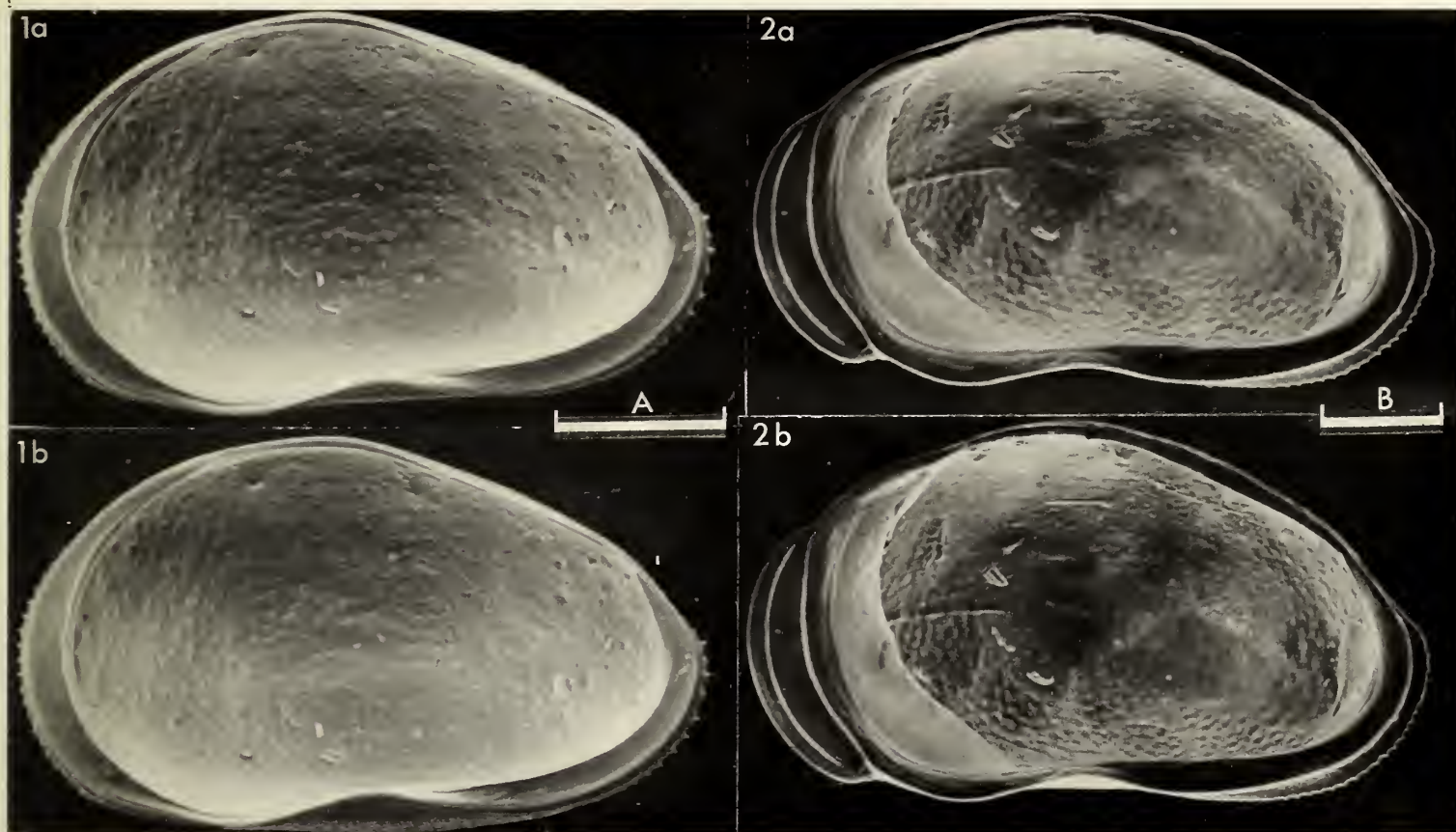
Explanation of Plate 3, 130

Fig. 1, juv. RV, int. lat. (HU.241.R.5, 1026 μm long); fig. 2, ♀ RV, int. lat. (HU.241.R.15, 1425 μm long).
Scale A (250 μm ; $\times 93$), fig. 1; scale B (250 μm ; $\times 66$), fig. 2.



Explanation of Plate 3, 132

Fig. 1, ♀ LV, int. lat. (HU.241.R.9, 1420 μm long); fig. 2, ♀ RV, int. vent. obl. (HU.241.R.15, 1425 μm long).
Scale A (250 μm ; $\times 69$), fig. 1; scale B (250 μm ; $\times 65$), fig. 2.



ON *CYPRIS DECARYI* GAUTHIER

by John W. Neale
(University of Hull, England)

Cypris decaryi Gauthier, 1933

- 1933 *Cypris decaryi* nov. sp. H. Gauthier, *Bull. Soc. Zool. France* **58**, 209–216, 4 figs.
1934 *Cypris ravenala* n. sp. V. Brehm, *Zool. Anz.* **108**, 74, figs. 1–7.
1944 *Cypris decaryi* Gauthier; W. Klie, *Inst. Parc. Nation. Congo Belge, fasc.* **12**, 16, 17.
1961 *Cypris decaryi* Gauthier; E. Triebel, *Senck. biol.* **42**, 56–59, pl. 6, figs. 1–8, pl. 7, figs. 9–12, pl. 8, figs. 13–18, pl. 9, figs. 19–20.
1964 *Cypris decaryi* Gauthier, 1933; G. Hartmann, *Asiatische Ostracoden, Int. Rev. Ges. Hydrobiol.* 144–145.
1971 *Cypris decaryi* Gauthier, 1933; K. G. McKenzie, *Phil. Trans. Roy. Soc. Lond. B* **260**, 265.

Type specimens: The repository is unknown.

Type locality: Androy, S Madagascar.

Figured specimens: University of Hull coll. nos. **HU.243.R.1a** (♀ LV, RV: Pl. 3, 134, figs. 1, 2), **HU.243.R.2a** (♀ LV, RV: Pl. 3, 138, figs. 1, 2; Pl. 3, 140, fig. 2), **HU.243.R.3a** (♀ LV, RV: Pl. 3, 136, figs. 1, 2; Pl. 3, 140, figs. 1, 3). [Limbs (Text-figs. 1, 2): Note that suffix 'b' in catalogue number indicates separate slide of limbs and soft parts of same specimen as 'a' which is slide containing the valves.] **HU.243.R.1, 2** from Pond, Kallundai, Jaffna, Sri Lanka; **HU.243.R.3** from Pond, Thunnalai, Jaffna, Sri Lanka. Both localities approx. lat. 9°37'N, long. 80°03'E.

Explanation of Plate 3, 134

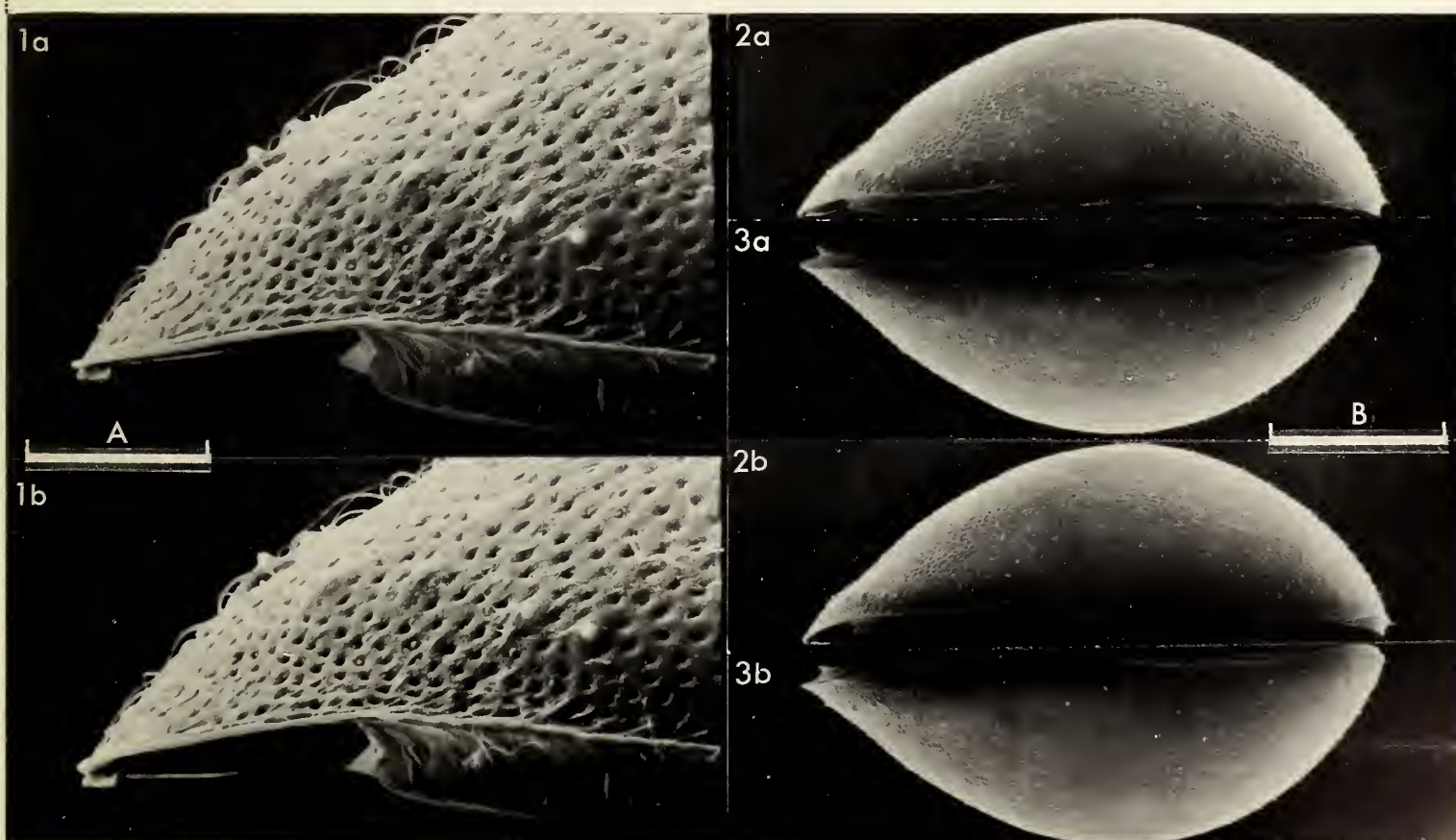
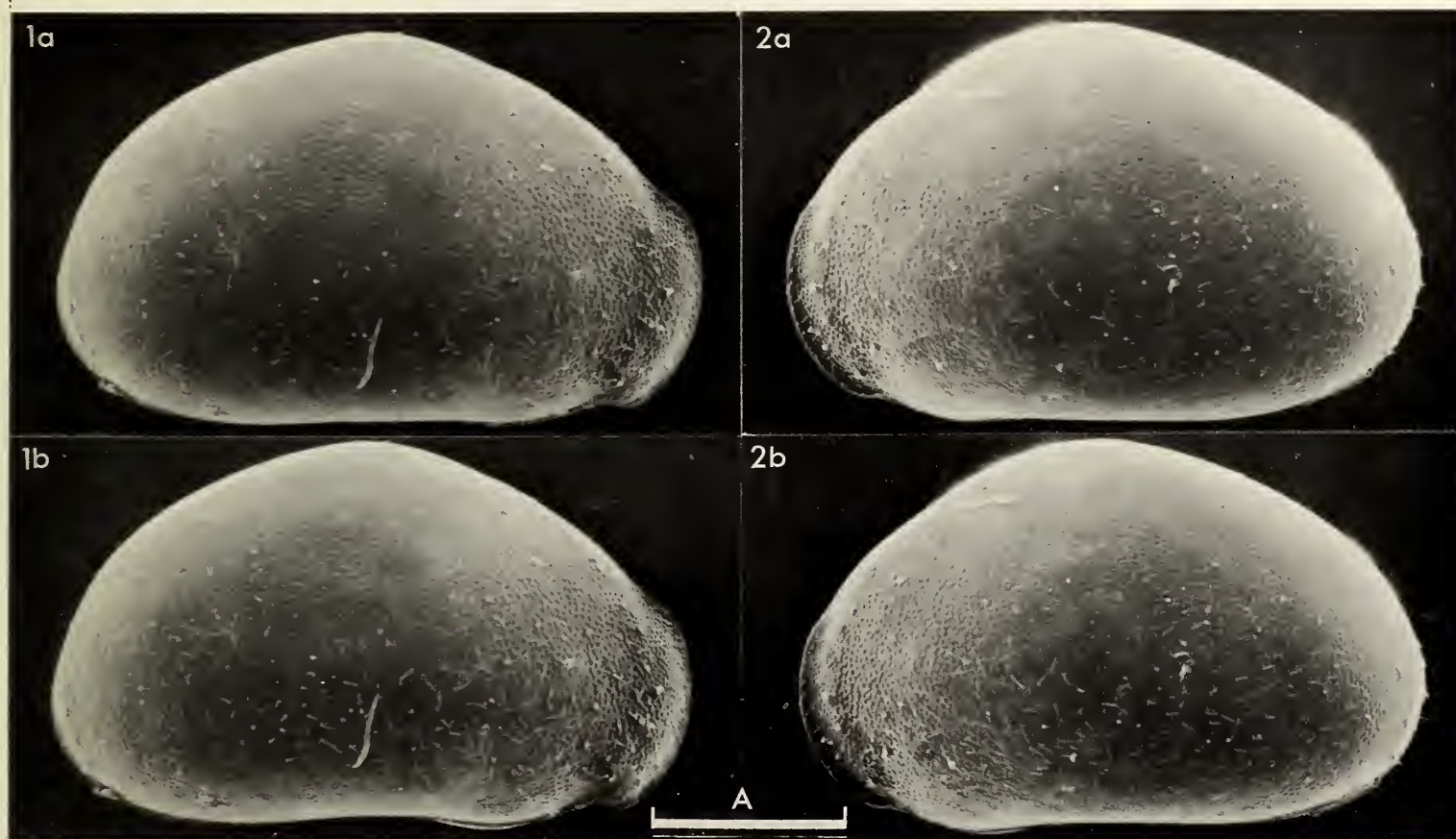
Fig. 1, ♀ RV, ext. lat. (**HU.243.R.1a**, 1680 µm long); fig. 2, ♀ LV, ext. lat. (**HU.243.R.1a**, 1670 µm long).
Scale A (500 µm; × 53), figs. 1, 2.

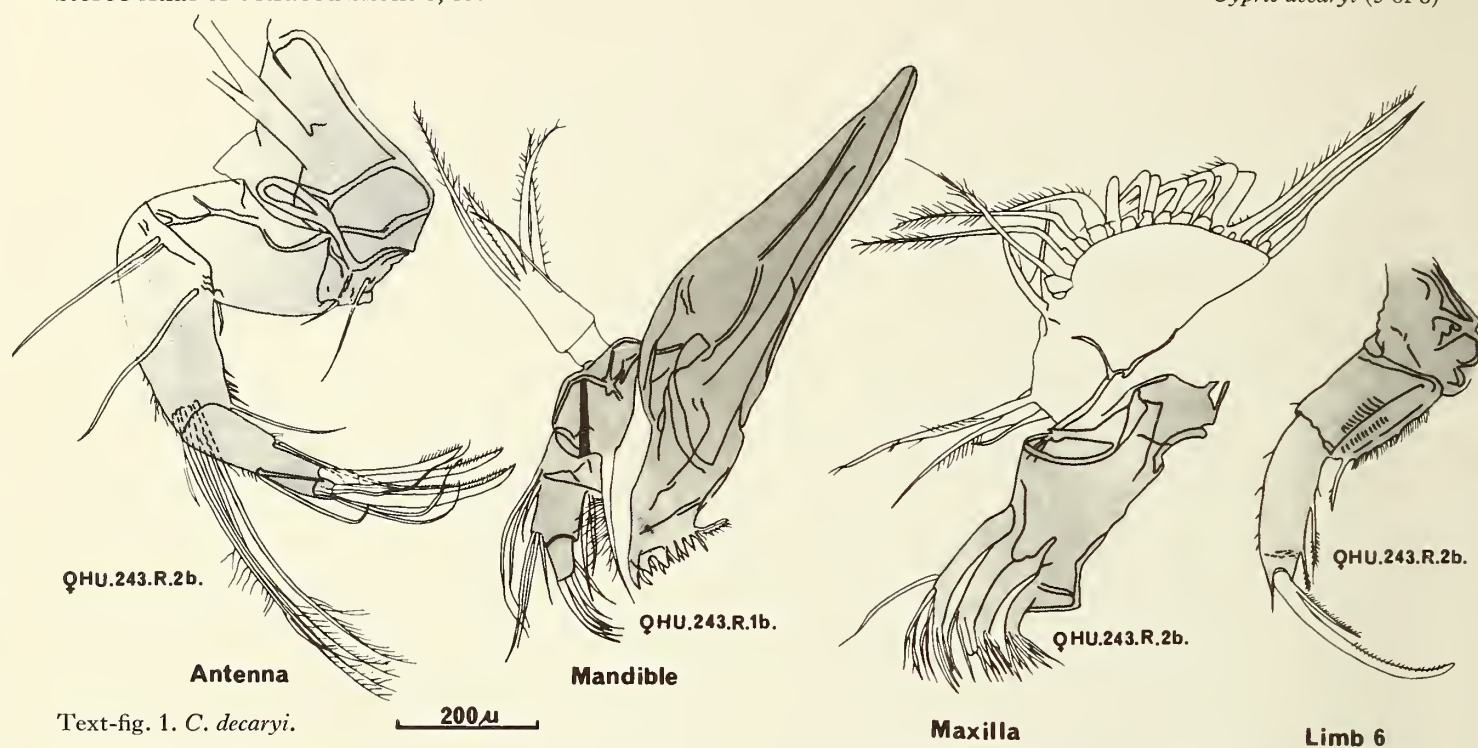
Diagnosis: Surface finely punctate, rounded posteriorly in lateral view, without posteroventral serrations. In dorsal view, pointed anteriorly with greatest width at about mid-length. Fresh material generally lacking colour.

Remarks: This species is widely distributed geographically but appears to be rare. Originally described from Androy at the southern end of Madagascar by Gauthier, Hartmann (1964) confirmed its presence at Itampolo on that island. Klie (1944) found it in the Belgian Congo (Zaire), and in S America Brehm (1934) found it in Dutch Guiana (Surinam) and Triebel (1961) in Curaçao (Dutch W Indies). In Sri Lanka it is only known from two localities in the Jaffna Peninsula at the northern end of the island. There is some variation in the pilosity of the sixth limb within the Sri Lanka material. Some agrees well with Gauthier's original figure but compare this with the figure given here of **HU.243.R.2b**. Males are unknown. Associated species include *Cypris subglobosa* J. de C. Sowerby and *Centrocypris viridis* Neale. *C. decaryi* appears able to tolerate a considerable salinity variation for from Aldabra, Seychelles, McKenzie (1971) records it in ten samples from pools and lakes whose salinity ranged from 1‰–8.9‰.

Explanation of Plate 3, 136

Fig. 1, ♀ RV, ext. ant. dors. (**HU.243.R.3a**); fig. 2, ♀ RV, ext. dors. (**HU.243.R.3a**, 1740 µm long); fig. 3, ♀ LV, ext. dors. (**HU.243.R.3a**, 1730 µm long).
Scale A (100 µm; × 250), fig. 1; scale B (500 µm; × 47), figs. 2, 3.

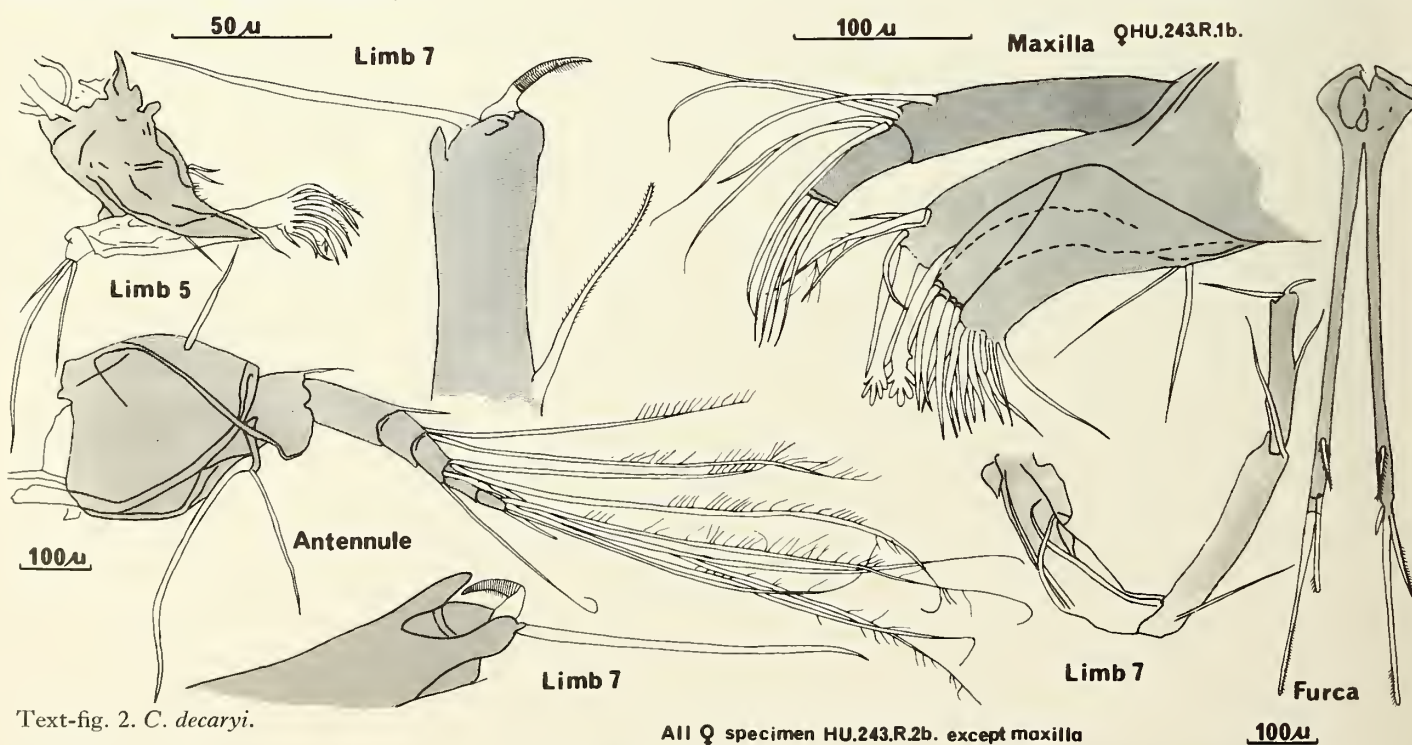




Text-fig. 1. *C. decaryi*.

Explanation of Plate 3, 138

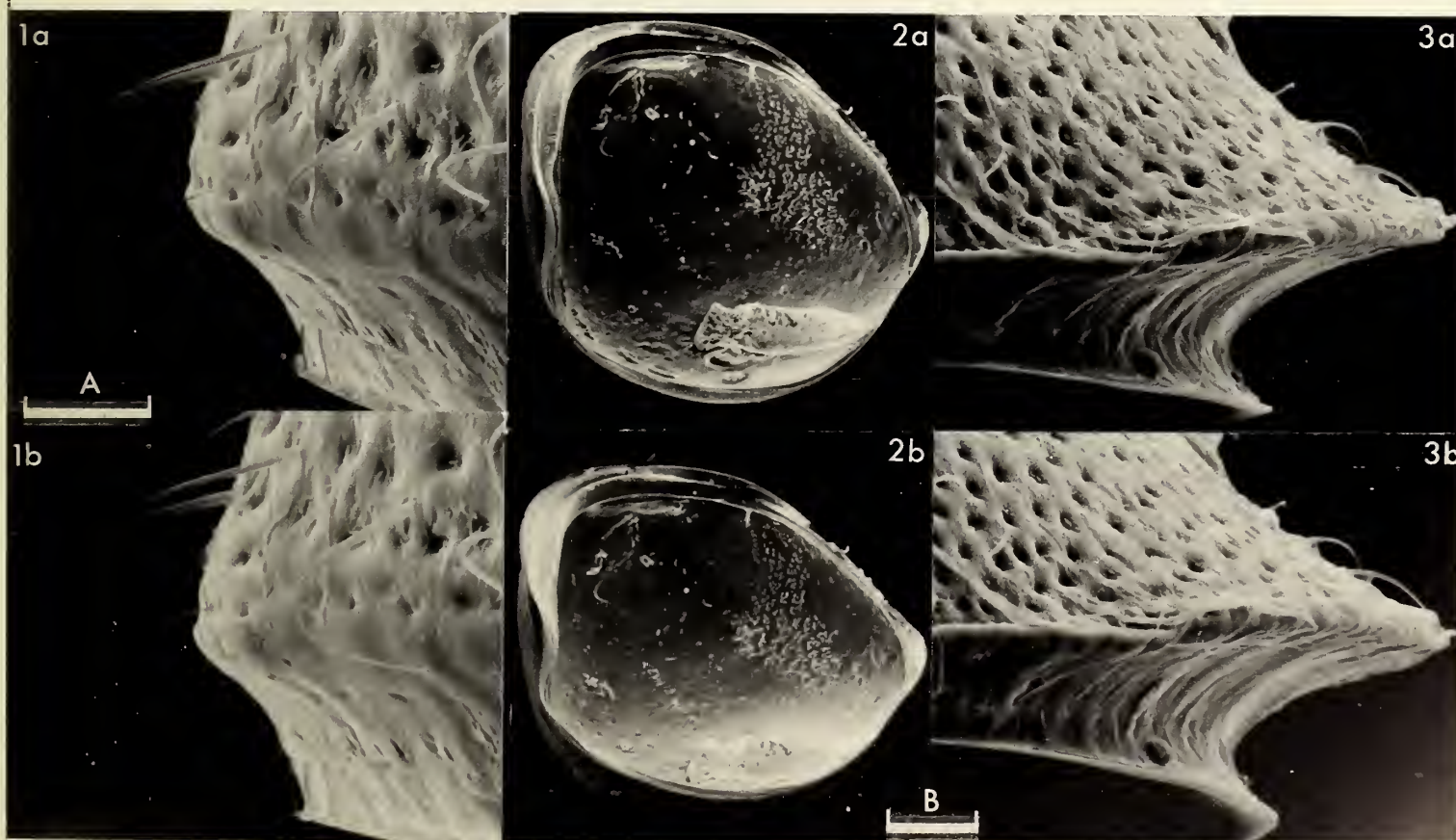
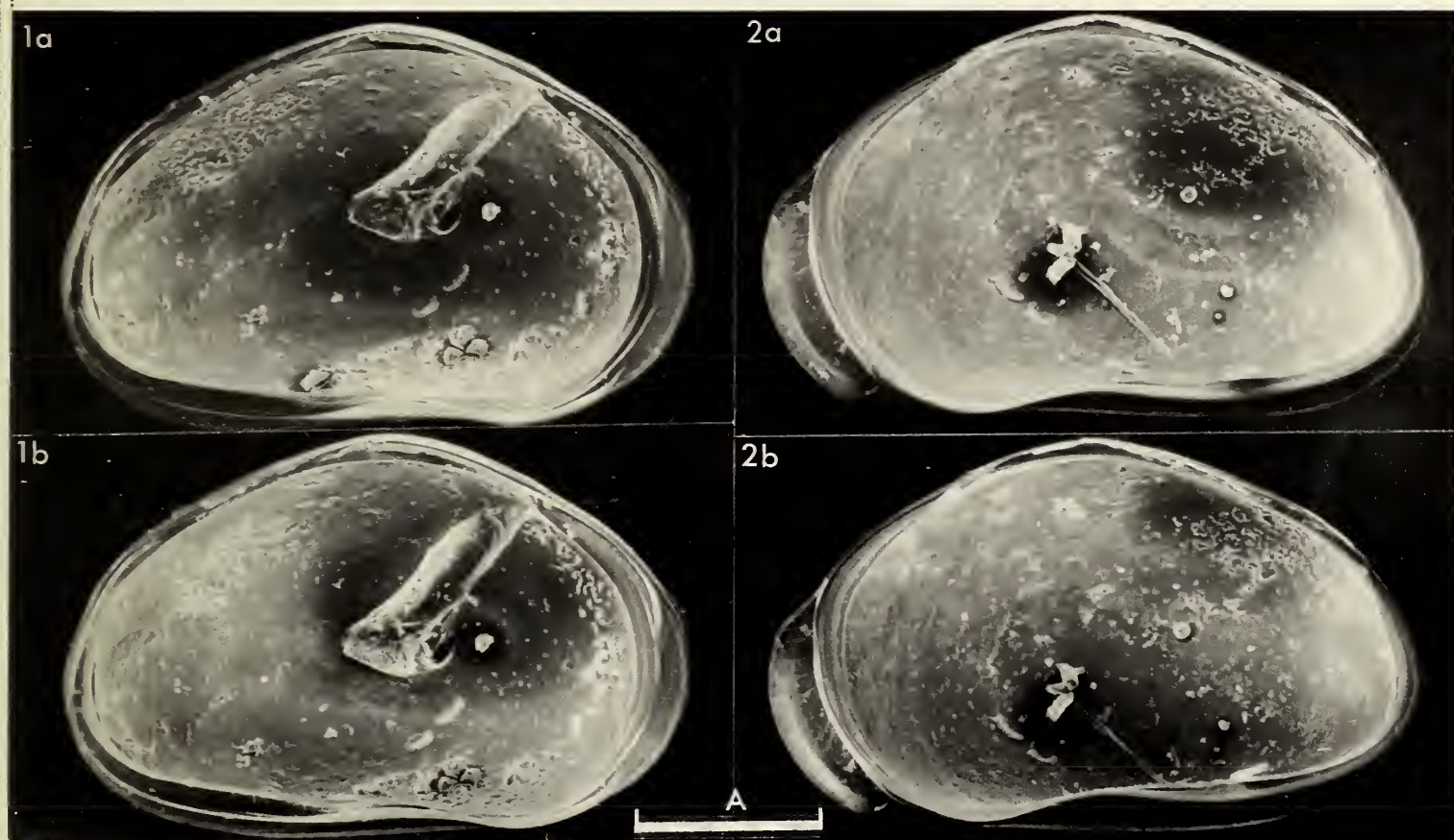
Fig. 1, ♀ LV, int. lat. (HU.243.R.2a, 1710 μ m long); fig. 2, ♀ RV, int. lat. (HU.243.R.2a, 1720 μ m long). Scale A (500 μ m; $\times 52$), figs. 1, 2.



Text-fig. 2. *C. decaryi*.

Explanation of Plate 3, 140

Fig. 1, ♀ LV, ext. post. dors. (HU.243.R.3a); fig. 2, ♀ LV, int. ant. obl. (HU.243.R.2a); fig. 3, ♀ LV, ext. ant. dors. (HU.243.R.3a). Scale A (20 μ m; $\times 850$), figs. 1, 3; scale B (250 μ m; $\times 52$), fig. 2.



ON *CYTHERELLA* (*CYTHERELLOIDEA*) *OBOLUS* DORUK sp. nov.

by Neriman Doruk
(University of Ege, Izmir, Turkey)

Cytherella (*Cytherelloidea*) *obolus* sp. nov.

Holotype: Brit. Mus. (Nat. Hist.) **IO 5761**, RV.

Type locality: A road section between Babatorun and Com, 1 km SW of Babatorun, Antakya region of Turkey; approx. lat. 36°04'N, long. 36°15'E. Uppermost Miocene; yellow sandstone with molluscan shell fragments and foraminifera. Presumed littoral.

Derivation of name: From the Greek, 'coin', referring to the fancied resemblance of the surface ornament to groups of coins.

Figured specimens: Brit. Mus. (Nat. Hist.) **IO 5761** (RV: Pl. 3, 142, fig. 1; Pl. 3, 144, fig. 3), **IO 5762** (LV: Pl. 3, 142, fig. 2; Pl. 3, 144, figs. 1, 2). Both specimens are from the base of the section at the type locality.

Explanation of Plate 3, 142

Fig. 1, RV ext. lat. (holotype, **IO 5761**, 740 µm long); fig. 2, LV ext. lat. (**IO 5762**, 715 µm long).
Scale A (250 µm; ×113), fig. 1; scale B (250 µm; ×117), fig. 2.

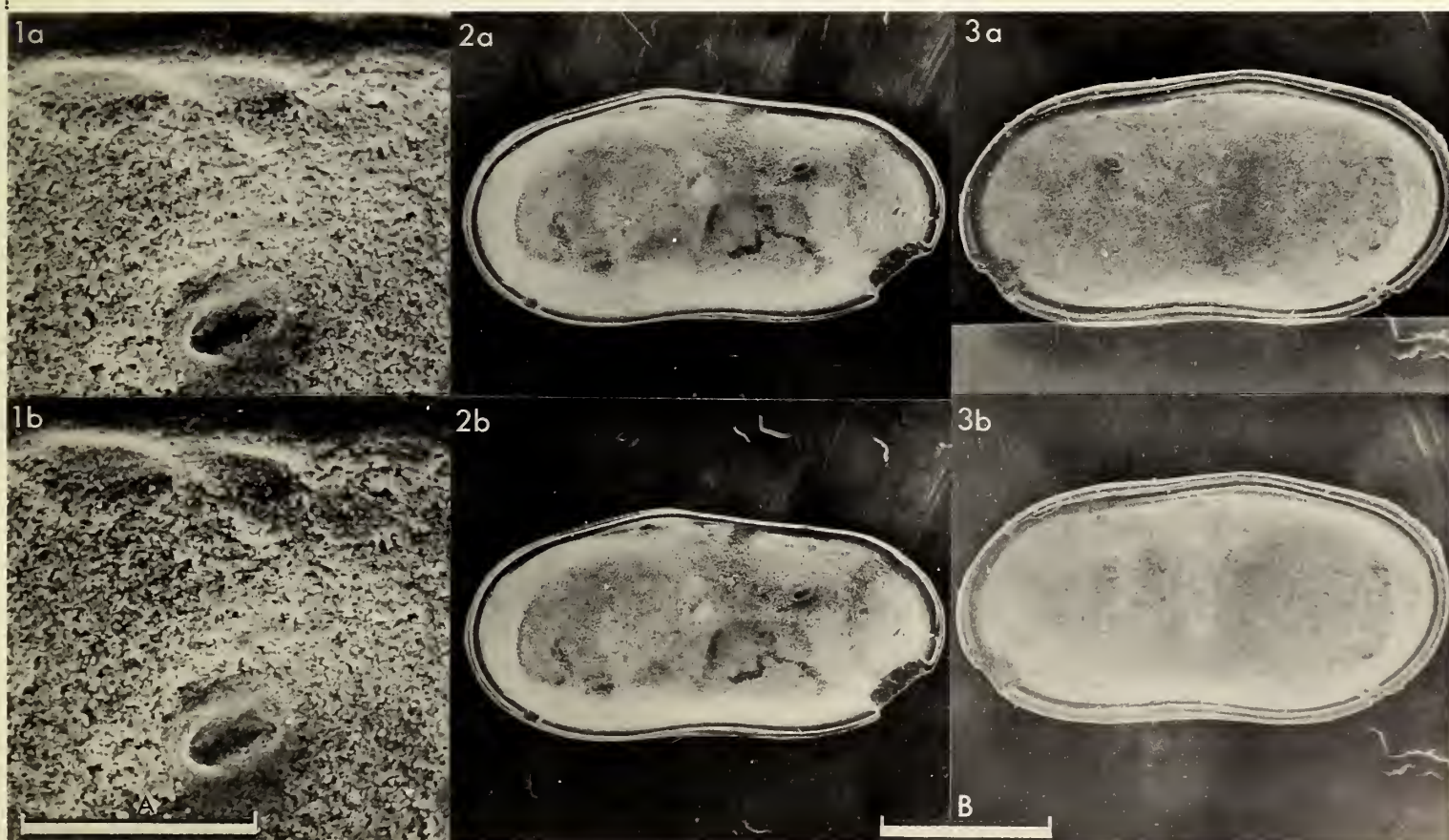
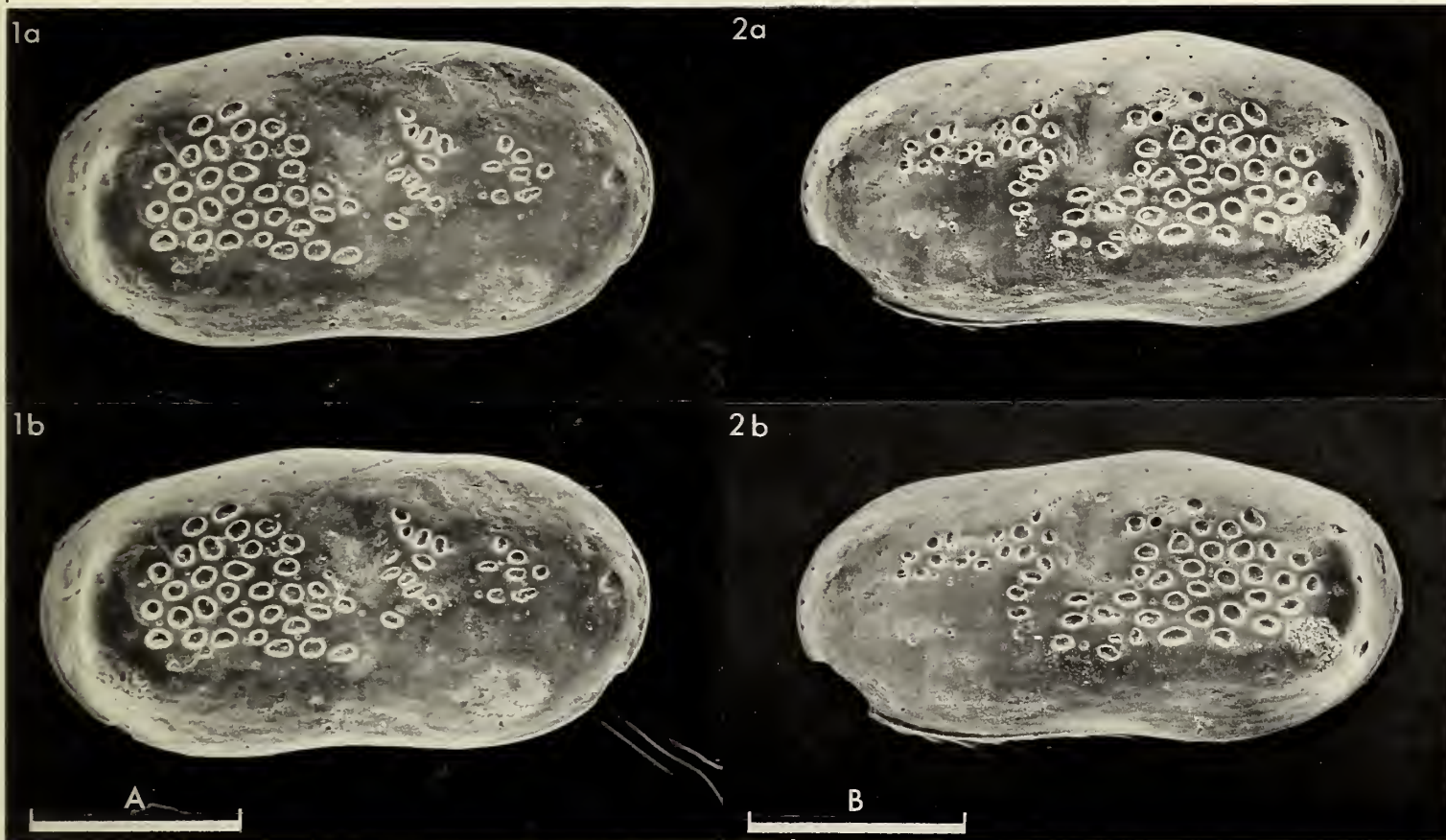
Diagnosis: Elongate with three groups of pits, the largest towards the posterior, the smallest towards anterior. Dorsal margin marked by angular change of direction in posterior third.

Remarks: This species differs from *C. fischeri* Terquem and *C. vesiculosa* Chapman in outline and ornament.

Distribution: Known so far only from type locality, Turkey.

Explanation of Plate 3, 144

Fig. 1, LV int. lat., pit [representing presumed mandibular fulcrum](**IO 5762**); fig. 2, LV int. lat. (**IO 5762**); fig. 3, RV int. lat. (holotype, **IO 5761**).
Scale A (50 µm; ×651), fig. 1; scale B (250 µm; ×93), figs. 2, 3.



A Stereo-Atlas of Ostracod Shells

edited by R. H. Bate, J. W. Neale, David J. Siveter and
P. C. Sylvester-Bradley

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